

COUNTRY GUIDE

THE FARM MAGAZINE

Integrated Farm

Why Fertilizer Use Climbs

Forever Too Late

(Fiction)

GENERAL SCIENCES

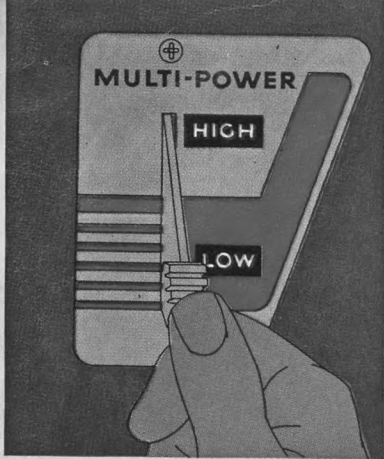
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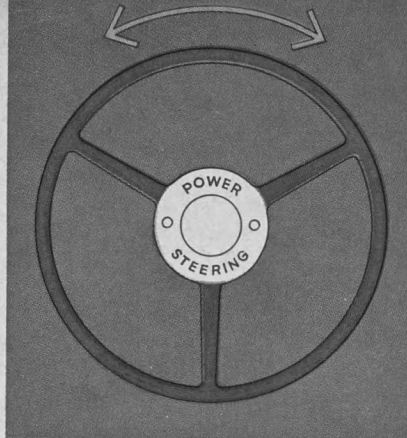
MARCH 1965 — 25¢



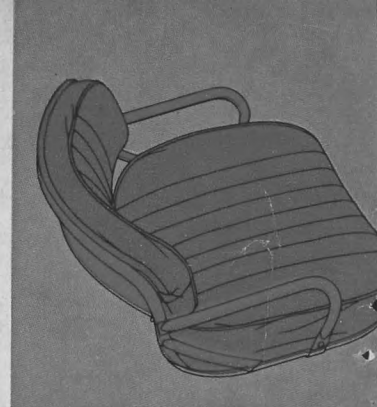
Multi-Power on the Super 90 WR lets you shift on-the-go at the flip of a switch. Just flip it down for more power, up for more speed. Gives you 16 usable forward gear speeds.



Differential Lock on the Super 90 WR gets you through slick going. If a wheel spins, just step on the pedal and both drive wheels turn together. Instantly you get the traction to pull through.



Power Steering is standard on both tractors. Makes it easy and effortless for the operator to handle these big, powerful luggers even in rough, cloddy fields or loose soil.



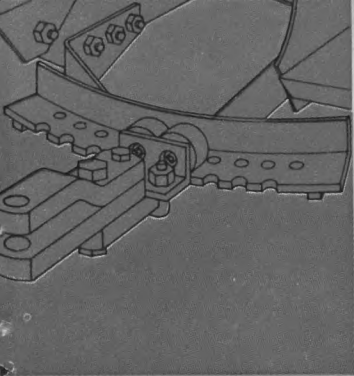
Float-O-Matic Seat on both tractors provides luxurious comfort. Soft cushioned seat and back shock absorber to smooth out job. Adjusts to your weight; slides back for more standing room.

POWERED EXTRA BIG FOR THE BIG PULLING JOBS!

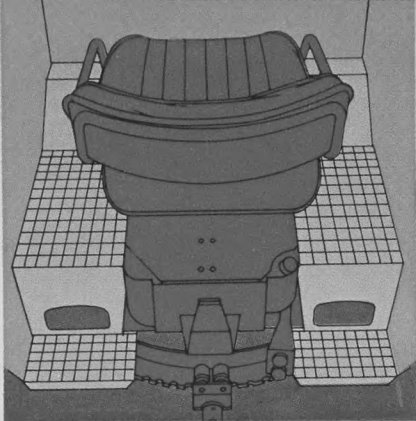
These are the massive diesel luggers that cut the wide-open spaces down to size: the 70 hp class MF Super 90 WR and the giant 100 hp class MF 97 with 4-wheel drive option. See them, test drive them—the tractors that are powered extra big to take the biggest farm jobs in stride!

MF Super 90 WR—full 5-plow strong.

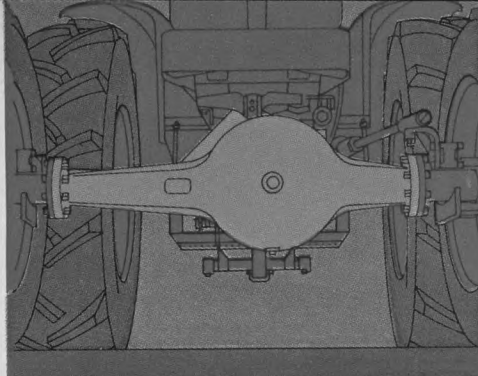




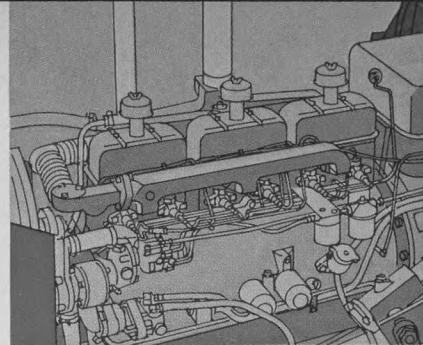
Massive Swinging Drawbar on both tractors is heavy-duty to handle big wheat country implements. Swings in an arc, or can be locked in position.



Roomy Platform on both tractors has plenty of leg room and stand-up room for real comfort. Made of non-skid steel. Up high, out of the dust.



4-Wheel Drive (optional) on the MF 97 provides up to 50% more traction to increase pull-power and end slips and stalls.



Big 6-Cylinder Diesel power plant in the MF 97 puts it in the 100 hp class, with full-power working range of 1000 to 1650 RPM.

MASSEY-FERGUSON

Massey-Ferguson Industries Limited, Toronto

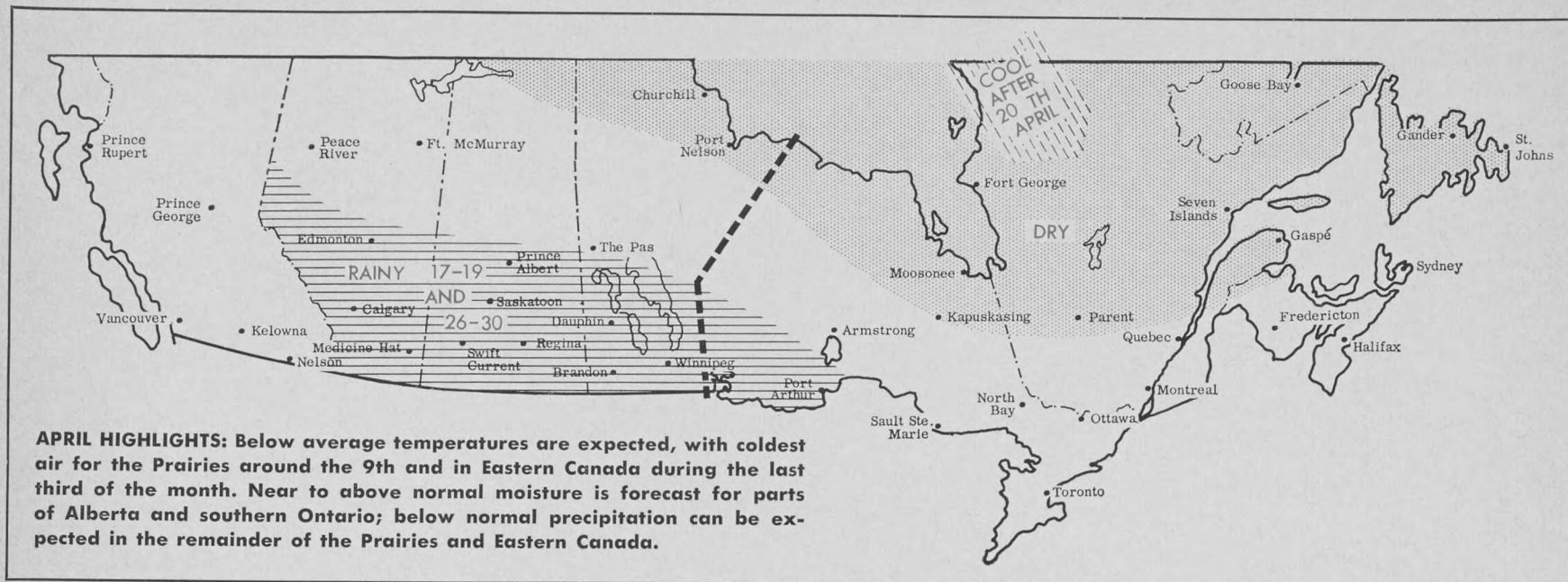


MF 97 with 2-wheel drive, or 4-wheel drive optional—up to 9-plow strong.

COUNTRY GUIDE

Weather Forecast

Prepared by IRVING P. KRICK ASSOCIATES



APRIL 1965

(Allow a day or two either way in using this forecast. It should be 75 per cent right for your area, but not necessarily for your farm.—Ed.)

Alberta



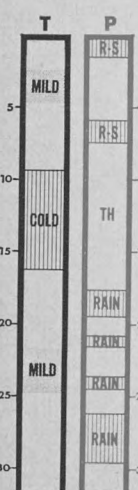
- 1st week 1-3:** Fair and mild (40s). Some threat of snow on 2nd, but precipitation will be spotty.
- 2nd week 4-10:** Seasonable temperatures will predominate between 5th-8th — scattered moisture likely. Temperatures will drop sharply during the week end.
- 3rd week 11-17:** Continuing cold at beginning of week, remaining cooler than normal. Unsettled weather likely around 13th; with main storm toward week end.
- 4th week 18-24:** General storminess, clearing on 19th, and remaining dry, with only minor shower threat around 23rd. Mildest (50s-60s) between 20th-22nd, then cooler.
- 5th week 25-30:** Fairly substantial moisture is likely from general thunderstorms toward month end. Expect coolest temperatures early in week, then warmer thereafter.

Saskatchewan



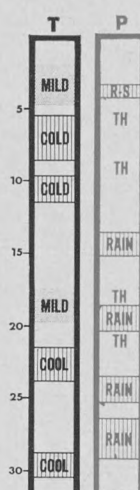
- 1st week 1-3:** Scattered light moisture and seasonable temperatures rising at week end are forecast.
- 2nd week 4-10:** Cloudy, unsettled weather threatens main precipitation around 4th and between 7th-9th. Mild at beginning of week, cooling toward week end.
- 3rd week 11-17:** Continuing cold (below 0 at night) for first 2 days and around 14th, 15th. More sun likely during this week, with only moisture forecast around the 13th.
- 4th week 18-24:** Precipitation general on 18th, 19th; sunny skies predominant through rest of week. Mild through 19th-22nd, then cooler. Showers in north around 24th.
- 5th week 25-30:** Cool at beginning of week, warming to seasonable. Frequent showers between 26th-29th, with some locally heavy amounts likely in south sections.

Manitoba



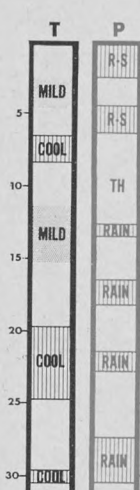
- 1st week 1-3:** Stormy on 1st, then sunny on 2nd and 3rd with highest temperature levels at week end.
- 2nd week 4-10:** A generally uneventful week, weatherwise, with only spotty light precipitation around 6th, 7th. Colder air is expected toward week end.
- 3rd week 11-17:** Chilly throughout week, with temperatures dropping to near 0 several mornings. Minimum precipitation; threatening around 13th in south, center.
- 4th week 18-24:** Cloudy, wet weather is forecast, with showers or rain about every other day. No extreme temperatures are expected; the last few days should be the warmest.
- 5th week 25-30:** Continuing wet, with frequent showers between 27th-29th which could prove fairly heavy. The interval will also be quite windy.

Ontario



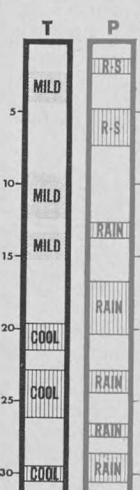
- 1st week 1-3:** Rising temperatures, with no significant precipitation indicated for Ontario.
- 2nd week 4-10:** Cooler by 6th, dropping again (10-20 at night) at week end. Fairly general showers around 4th, threatening again near 6th, and in north near 9th.
- 3rd week 11-17:** Cool weather will give way to warming temperatures. Precipitation light, with main activity likely around 14th, 15th.
- 4th week 18-24:** Mild days precede rain and gusty winds expected around 19th, 20th. Threatening again on 22nd, with more showers in northern areas toward week end.
- 5th week 25-30:** Predominantly cloudy and unsettled, with main showers expected between 27th-29th. Cool air will move into most sections on the 29th.

Quebec



- 1st week 1-3:** Wet until skies clear on the 3rd, when temperatures will rise to mild levels.
- 2nd week 4-10:** Mild weather will moderate to seasonable after 5th when spotty showers develop, continuing on 6th. Trend will be toward cooler conditions on 7th, 8th.
- 3rd week 11-17:** Precipitation will be light, despite scattered showers due around 13th, more rain in south at week end. Warm (temperatures in 50s-60s) between 12th-15th.
- 4th week 18-24:** Stormy weather will clear gradually on 19th, 20th. It will be chilly between the 20th-24th, and rain is expected in southern section on the 22nd.
- 5th week 25-30:** Temperatures will climb to seasonable levels under sunny skies before storms set up near the 28th. Intermittent rain to month end; cooler on 30th.

Atlantic Provinces



- 1st week 1-3:** Cloudy and unsettled weather will predominate. Main precipitation on 2nd, mildest at week end.
- 2nd week 4-10:** Intermittent rain and snow between 5th-7th. Highest temperatures are likely at beginning and end of week with seasonable conditions during remainder.
- 3rd week 11-17:** Mild and generally free from storms. Above normal temperatures (50s) between 10th-15th. Light showers around 13th, and toward week end.
- 4th week 18-24:** Intermittent showers through 20th, improving some toward mid-week as cooler air moves in. Showers and further cooling forecast for 23rd, 24th.
- 5th week 25-30:** Cool, then warming to seasonable near 27th with locally heavy rains likely between 27th-30th. Windy. More cool air is expected toward week end.

Key to Abbreviations: T, temperature; P, precipitation; CL, cooler; WM, warmer; TH, threatening; SH, showers; R-S, rain or snow.



Your love, and Robin Hood Flour— the two most important ingredients in birthday cake

(and bread and piecrust and brownies and cinnamon buns and pancakes and chocolate chip cookies
and shortcake and plum pudding and dumplings and apple strudel and cream puffs and jelly doughnuts.)

Chocolate Maraschino Cake

2 cups Robin Hood All Purpose Regular or Instant Blending Flour
1½ cups sugar
1½ tsps. soda

¾ tsp. baking powder
¾ tsp. salt
½ cup soft shortening
1¼ cups buttermilk or sour milk
¼ cup maraschino cherry juice

2 eggs
2 squares (2 oz.) chocolate, melted
⅓ cup chopped maraschino cherries

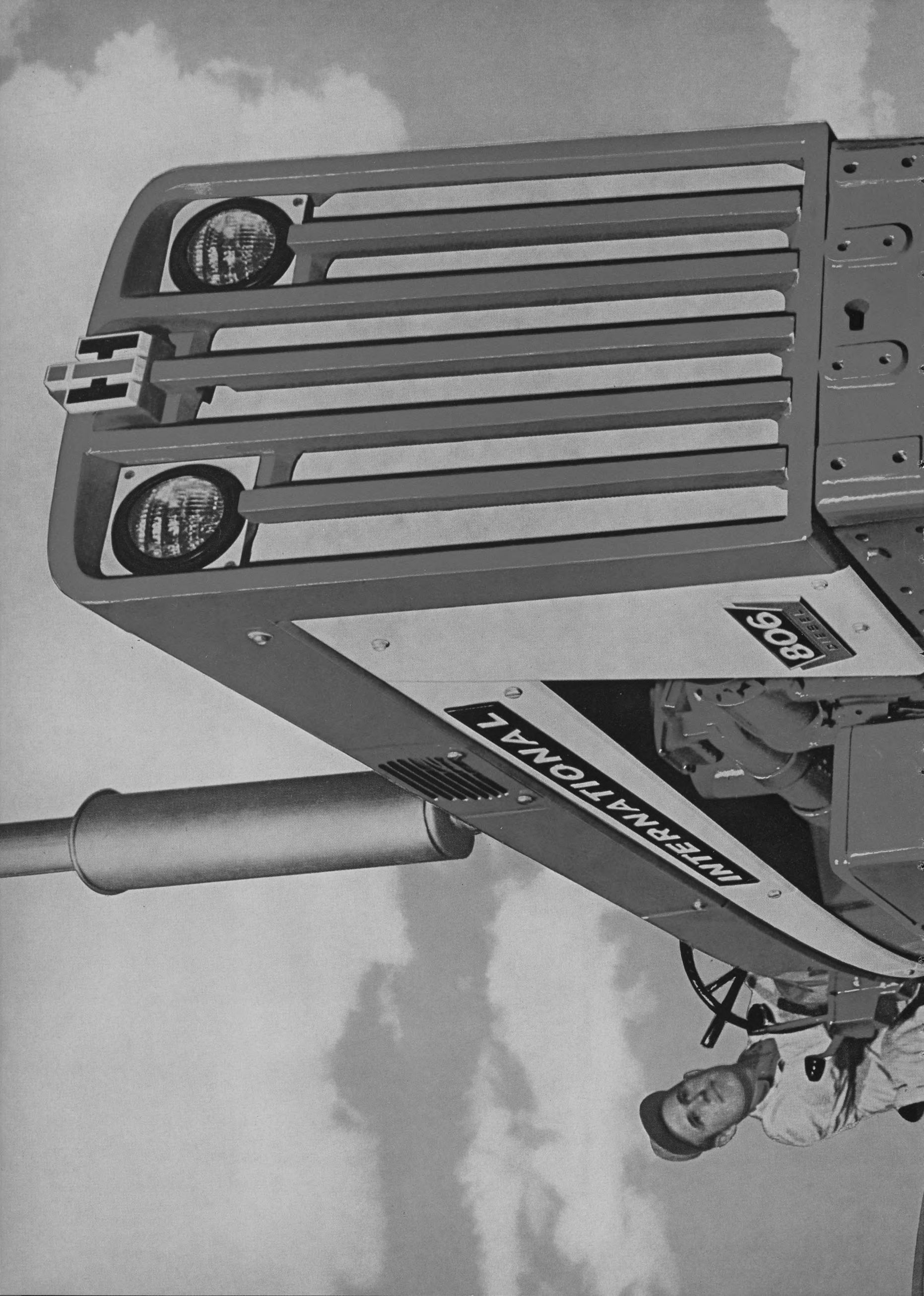
Preheat oven to 375°F. (moderately hot). Grease and line with waxed paper, two 9" layer pans. Measure flour, sugar, soda, baking powder and salt into mixing bowl. Stir thoroughly to blend. Add shortening and buttermilk or sour milk. Beat 2 minutes with electric mixer (at medium speed) or by hand (150 strokes per minute).

Add cherry juice, eggs and melted chocolate. Beat 2 minutes more. Stir in chopped cherries. Spread batter evenly into prepared pans. Bake at 375°F. for 30-35 minutes. Allow cake to cool 15 minutes before removing from pans. Frost with Fluffy White Icing.



Robin Hood

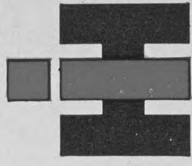
ALL-PURPOSE
FLOUR
REGULAR
OR
INSTANT
BLENDING
IT'S BAKE-TESTED





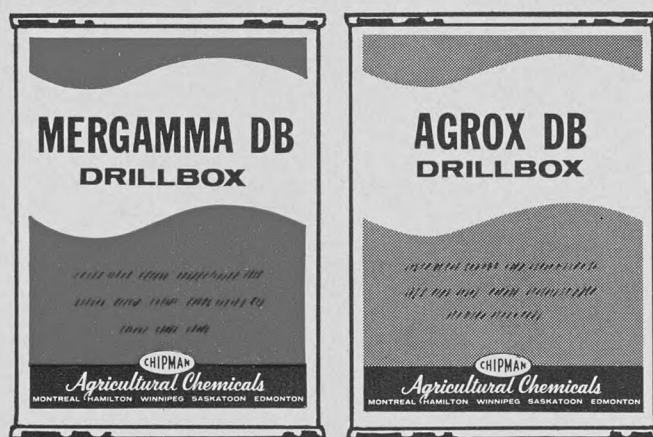
TOTAL POWER IS SWEEPING THE WEST!

The word is spreading across the prairies—these are the *reliable* tractors! Never before has so much dependability been built into big farm power. You can see it in the massive housings. It's in the smooth, multi-range engines with exclusive Elotherm-hardened crankshafts—and in the exclusive Dyna-Life clutches that outlast others five to one. You find dependability in every part and component from grille to drawbar. And never before has so much big, *usable* farm power been under such total command. See your International Harvester dealer. Learn first hand why Total Power is sweeping the country.



INTERNATIONAL 706—806

**NO GRAIN LEFT OVER
NO HANDLING TREATED GRAIN
NO EQUIPMENT
NO PART COVERAGE
NO TIME WASTED
NO GUESSWORK**



2 NEW SEED TREATMENTS

**Specifically Developed and NOW Approved
for Application in your Seed DRILL BOX**



**IN 2 SIMPLE STEPS HERE'S HOW THE DRILL BOX
SEED TREATMENTS ARE APPLIED**

IT'S SIMPLE:

1 SPREAD

2 MIX

... it's easy, simply spread one of Chipman's DRILL BOX Seed Treatments with the seed you need in your drill box—there's no treated seed left over—treat as you sow; mix the seed treatment and seed with any 2 inch wide stick — there's no special equipment needed nor handling of treated seed or special clean-up. The 2 oz. DRILL BOX treatment covers better too, ensuring even better results; you save time, avoid guesswork about how much treated seed you'll need, treat only the seed in the DRILL BOX for the acreage you wish to sow.

Specially developed and approved for use in your seed DRILL BOX, this treatment is another major development by Chipman, the Agricultural Chemical leaders.

Chipman feel so confident in this development that every purchase of either AGROX DB or MERGAMMA DB is covered by Chipman's Free "DOUBLE-VALUE WARRANTY" which guarantees you double-the-value of elevator degrade loss from diseases noted on the labels — consult with your dealer today!



NOW — Seed treatment made easier!

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Letters

Quebec Ranch Tour

I wish to thank you most sincerely for the interest that you have shown in our visit West last summer with a group of members of the Quebec Agricultural Society.

Your article in the October issue with the photos of the group which were taken during the visit at the Rio Alto Ranch, near Longview, were perused by many of the participants of our 1964 Western Tour. They were greatly pleased that a publication so widely read, devoted an entire page to this particular phase of their trip.

J. G. Leduc,
Assistant Area Sales Mgr.,
Canadian National Railways,
Montreal.

Like Ice Fishing

The December issue of Country Guide had an article by Pete Williams, "Ice Fishin' Is Nice Fishin'." This was most entertaining and we were also interested in the ice auger he described.

We live by Francois Lake in central B.C. and are having an "old-fashioned winter" which has created a great thickness of ice!

H. M. Shelford,
Francois Lake, B.C.

High Class Fiction

May I urge you to continue to publish the high class of fiction that you already do. It is a welcome relief from the semi-neurotic and so-called sophisticated rubbish put out by so many periodicals today. There is still a place in our land for uprightness and old-fashioned morality.

J.M.B.,
Westerose, Alta.

More Humor

Country Guide is a *good* farm magazine. I would suggest that there be a bit more humor tucked in here and there. Who doesn't like a laugh now and then?

Mrs. F.D.,
Pt. Maitland,
Yarmouth Co., N.S.

More on Depth Control

Regarding the article, Wide Level Disc Improvements, in your January issue, the part relating to packers was very well done and should be useful to farmers. In regards to draft control and the rear furrow wheel locking device . . . your explanation might leave readers at a loss to understand.

RALPH SWEET,
Forgan, Sask.

We said that "the furrow wheel is kept in line by replacing the spring with a hydraulically operated locking device." This should have read "a mechanically operated locking device." What was described on the diagram as the "Rear Wheel Control Cylinder" is just an ordinary 2½-inch pipe with a telescoping pipe or shaft which slides inside when left turns are made. A cable can be used in place of rods, as only pull is required, Mr. Sweet reports.

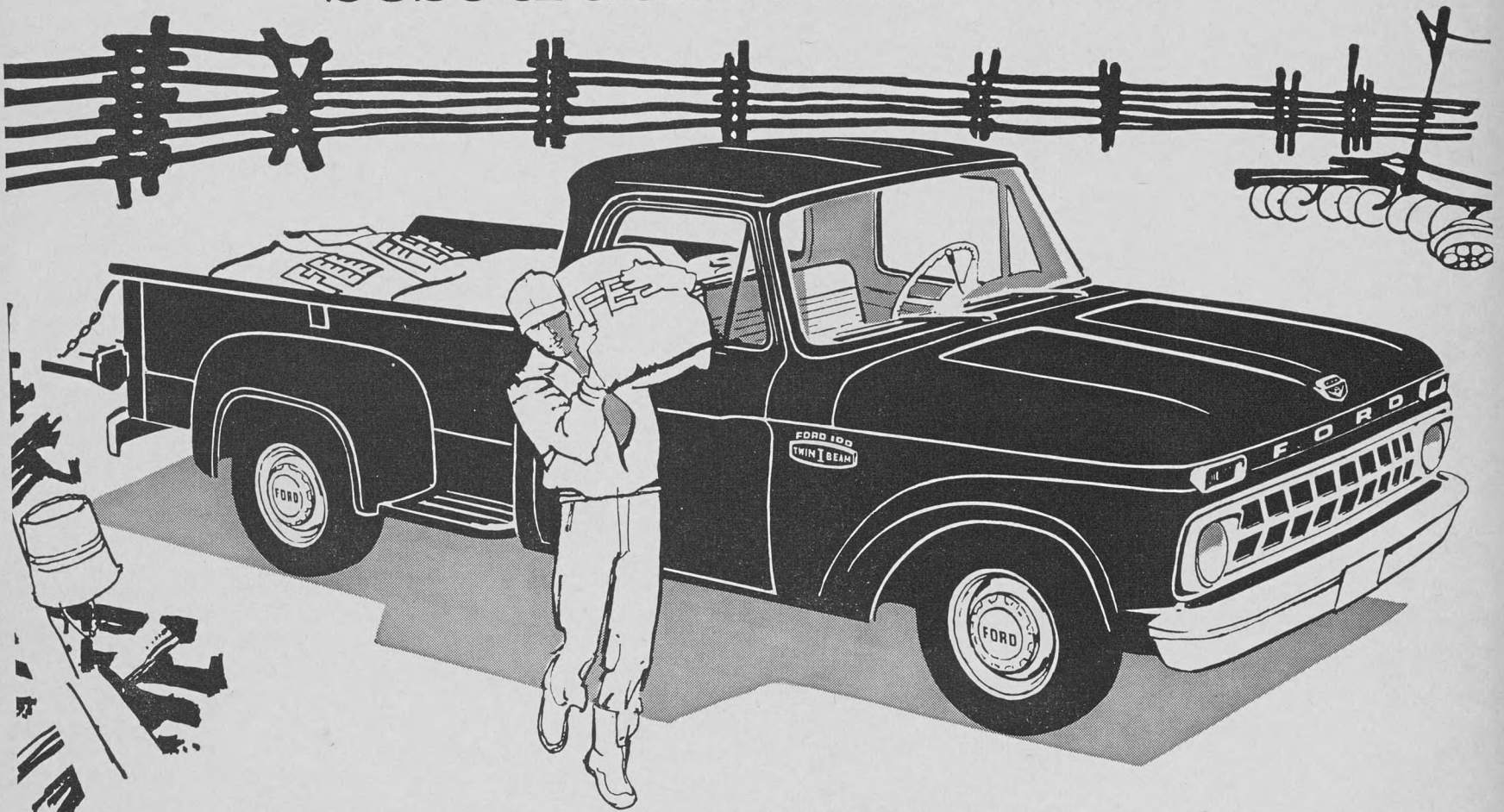
—EDITOR.

V

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Find out why this '65 Ford-Built Pickup is the best truck for farmers!



You've never ridden in *any* pickup as comfortable—yet so rugged. The secret is an exclusive new independent front suspension that uses forged I-beam front axles borrowed from big-truck design. And there's not one but *two* axles. Result of this new kind of front end: *Superior riding smoothness*—better steering control—greater road stability and safe, sure handling.

And you can choose from a completely new lineup of big, powerful engines when you pick out your '65 Ford-Built Pickup. *A new seven-main-bearing 240 cubic inch Six is standard.* The impressive new *300 cubic inch Big Six* is the biggest Ford Six ever installed in a pickup.

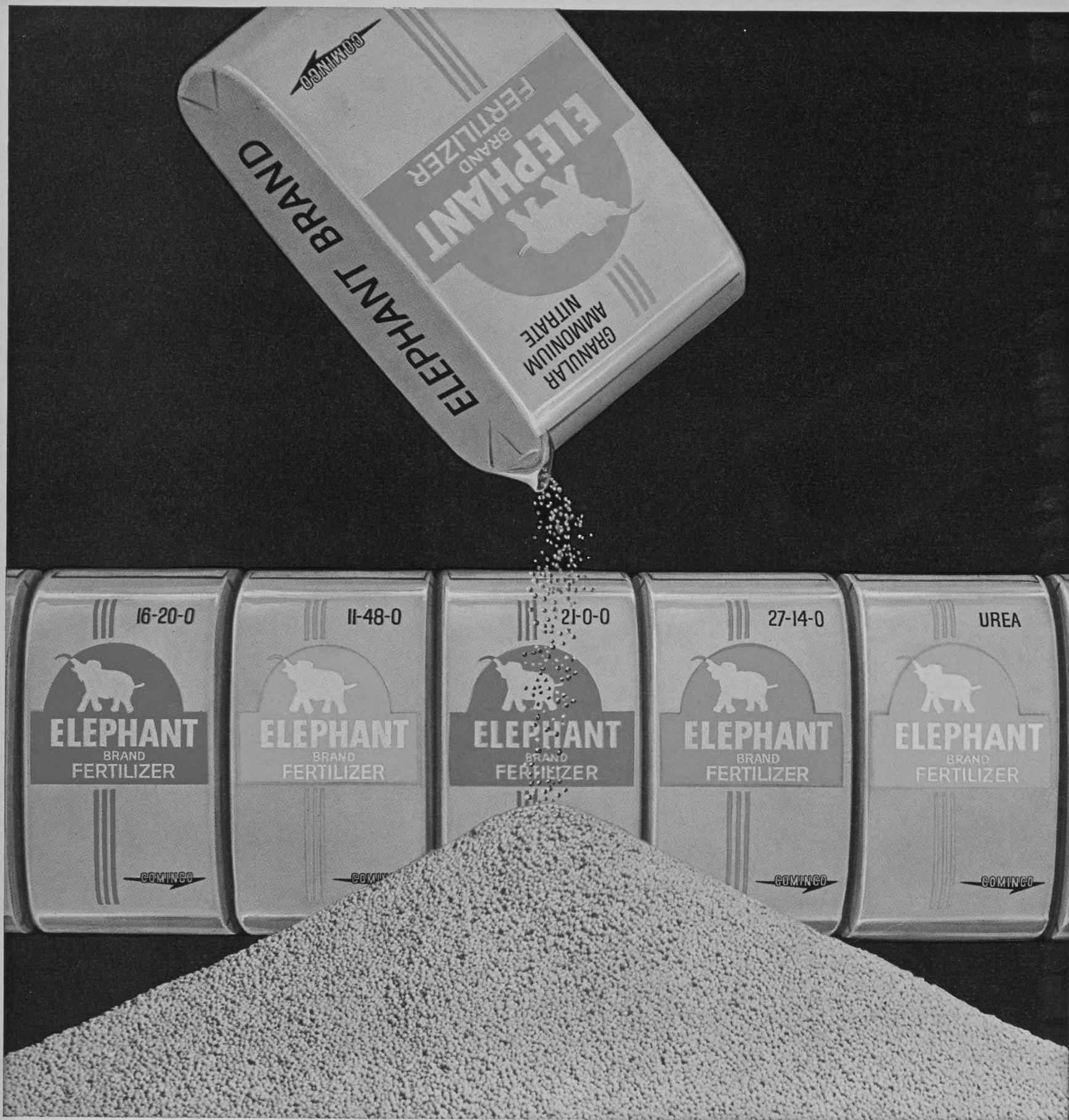
Get Ford-Built features like the colour-keyed interiors—heavy-gauge ladder-type frames—*double-wall box* and one-hand tailgate action latch.

Whether you choose a *Styleside* body or the *Flareside*, with the handy running-board, you can be confident of getting a pickup that will work harder, for less cost, far longer than any other pickup you've ever owned.



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BEAVERLODGE Foster's Seed & Feed
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WARSPITE Warspite Feed Mill
WASKATENAU Waskatenau Motors
WESTLOCK F. Merryweather
(1962) Limited
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WILLINGDON Star Service
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COUNTRY GUIDE

THE FARM MAGAZINE

Editor: DON BARON

Associate Editors:

CLIFF FAULKNER—Calgary, Alta.
PETER LEWINGTON—London, Ont.
ROGER FRY—Winnipeg, Man.

Home and Family Section:

ELVA FLETCHER
GWEN LESLIE

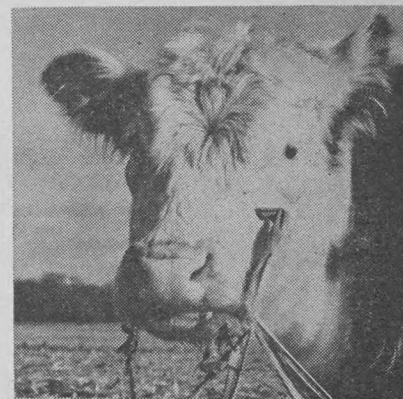
March 1965

There is a brisk trade in farms right now. It goes like this. A farmer in the southern prairies sells out and with the down payment buys a bigger farm in the northern areas. The man he displaces goes on to the Peace River and stakes out an even bigger farm on new land.

There must be a better way. In this issue Country Guide tells of some men who have found a way to build a bigger farm without buying more land or moving north: Cliff Faulkner describes how John Vaselenak uses irrigation, fertilizer, cash crops and livestock feeding to get enough income for four families from a 480-acre farm; Roger Fry tells of the swing to continuous cropping that chemical weed control, soil testing and increased use of fertilizer make possible and how three farmers market the extra production.

In the Livestock department there are two examples, from British Columbia and Ontario, of profitable beef feeding based on high quality forages. If you have already found a way to profitable returns, read "How to Pay Less Income Tax," in the Management department.

While Western Canada suffered record low temperatures this winter, southern Ontario was comparatively balmy. We offer proof of this in the photo story, "Bovine Beachcombers" on page 42.



[Guide photo]

Featured

- 18 Treat Seed in the Drill Box
- 21 Integrated Farm
- 22 Why Fertilizer Use Climbs
- 23 Bulk Handling and Blending
- 24 Crop Spraying
- 26 Wheat Still King

- 27 Better Maritime Markets
- 28 Blasted Ponds for Fire Protection
- 42 Bovine Beachcombers
- 60 Guide for a 1965 Seeding Program
- 75 Forever Too Late (Fiction)
- 93 Manitoba Tries Voluntary Teletype for Hogs

Every Month

- 4 Weather
- 8 Letters
- 13 Editorials
- 16 News Highlights
- 17 Guideposts
- 30 Livestock — His Steers Suffer from Overenjoyment
- 43 Dairying — Select Better Dairy Replacements
- 46 Horticulture — Friend in the Greenhouse

- 48 Poultry—Calcium for Laying Hens
- 50 Soils and Crops—New Virus Threat to Corn
- 66 Management—How to Pay Less Income Tax
- 68 Buildings—Heat Loss Causes Ventilation Failure
- 70 Mechanics—Farm Water Supplies
- 73 Workshop
- 74 What's New
- 98 Rural Route Letter

Home and Family

- 78 Let's Think It Over
- 79 Almost a Dairy Farm
- 80 Rural Rhymes
- 82 Build a Fence with Boulders
- 83 Handicrafts — Stitchery
- 84 A New Beginning

- 86 In the Kitchen—Eggs for Easter
- 89 Patterns
- 90 That All-Round Look
- 91 Young People
- 92 Boy and Girl

About Our Cover

This feedlot on the 350-acre farm of Don and Jack Lehrbass at Alvinston, Ont., is one of hundreds that are springing up in the province and making it an area of increasing importance in beef production. About 400 Western cattle go through this feedlot each year.—Peter Lewington photo.

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Circulation Manager: R. W. McGUIRE

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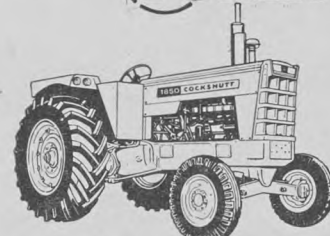
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New Policy Needed

EVERY DAY BRINGS fresh evidence of the urgent need for a massive and searching appraisal of farm policy in this country.

The Dairy Farmers of Canada at their annual meeting called for a new and greatly enlarged program of assistance to their industry, based on a support price of \$3.50 per cwt. for manufacturing milk.

Ontario's Deputy Minister of Agriculture, Everett Biggs, stated at a farm meeting that the development of long-term policy is essential to the continued welfare of agriculture. He said farmers must have an assured and adequate income giving them a fair interest on their large capital investment, and a standard of living on a level with that of other people in the economy. He said, "There is no place for a cheap food philosophy in our present economy. Too many people for too long now have embraced this food philosophy which is not in the best interests of agriculture or of our economy."

In Nova Scotia, Secretary David Kirk of Canadian Federation of Agriculture told a farm group that the average net income received by farmers in the Maritimes for a year's work in agriculture had dropped since 1949 by about 40 per cent in real constant dollar terms.

At a meeting in Alberta, Vice-President

George McLaughlin of Dairy Farmers of Canada stated that farmers are subsidizing consumers. In terms of 1949 dollars, they are 30 per cent lower in earning power while wage earners are 54 per cent higher. Many farmers live on depreciation, but 110,000 dairy farmers have quit since 1950. People should not complain about government subsidies to farmers, he concluded.

A similar need for new policy thinking was forcefully stated in the United States recently by Dr. Willard Cochrane who returned to the University of Minnesota after 3 years as top economist with the United States Department of Agriculture. He warned that his country is on a collision course on farm policy, stating that increased productivity continues to run ahead of demand. He predicted that as this leads to higher costs for the government farm program, urban voters will eventually reject these costs. The problem is one of having the courage and the attitude to put into operation a program with the capacity and power to eliminate excess productive capacity, he said. He added that the typical commercial farmer today is a much better technologist than his father was, but on economic matters extending beyond his own farm he is terribly blind.

The evidence continues to roll in. There is an urgent need to begin a whole new searching appraisal of farm policy in this country. V

Let's Tip the Scales

IN THE SUMMER of 1964, Dr. Tom Burgess of Ontario Agricultural College surveyed 148 beef cattle herds in the province which were using performance-tested bulls. On only two of these farms did he find livestock scales. Since these scales can be one of the breeder's most valuable pieces of equipment, one is forced to wonder why so few people are using them. One reason may well be the tariff.

It is an anomaly that, on the one hand, farmers are urged to purchase livestock scales and participate in breed improvement while, on the other hand, antiquated regulations rob them of the incentive to complete the purchase.

The last farm equipment tariffs between Canada and the United States were removed in 1944, and farm equipment has since flowed both ways across the border. Farm equipment, that is, except such vitally important items as livestock scales. This exception was recently brought to the attention of the Minister of Finance by the Canadian Federation of Agriculture. The CFA stated: "In the interests of improving the quality of farm animals, farmers have been encouraged to make wider use of livestock scales on their farms. Animals marketed at proper weights make better quality meat products, and there is growing emphasis being placed on the use of scales in weighing and testing the progeny of beef cattle sires. Farmers must have portable scales for this purpose and these are quite expensive, even before the application of the 20 per cent tariff. Therefore, we request the creation of a new tariff item as follows:

"Portable and stationary scales for weighing livestock, for use on the farm, for farm pur-

poses only. Attachments, accessories and parts of all the foregoing — free."

Since there are scales manufactured in Canada, the "Buy Canadian" banner could be waved. But there is an object lesson in the farm equipment field. One Canadian manufacturer makes combines not just for the Canadian market, but for the entire North American market. It is obvious that removal of the tariff could benefit Canadian manufacturers.

What about the third party in this scheme of things, the Minister of Finance, who would no longer be able to nick the farmer for 20 per cent? Without question he too would be a beneficiary of this overdue change. Canada has a serious trade imbalance with the U.S. Scales are an integral part of breed improvement and only breed improvement can make our producers fully competitive with breeders south of the border. V

So Far So Good

NOW THAT THEY have absorbed the initial shock of the January wheat price drop, few thoughtful wheat growers will seriously question the stand taken by Trade Minister Mitchell Sharp. Despite cries for compensation for the price drop and finally the demand by the Canadian Federation of Agriculture for export subsidies on wheat, Mr. Sharp has refused to commit the government to hasty action.

Speaking in Winnipeg, he pointed out that large quantities of wheat are being grown and sold by prairie producers at prices which are reasonably high in relation to long-time levels. Wheat farmers were receiving total payments

of between \$460 and \$500 million per year for their grain in the 5 years between the 1955-56 and 1959-60 crop year. This climbed to a record \$915 million in the 1963-64 crop year, and it won't be far behind that in this present year, said the Minister. Mr. Sharp went on to assure prairie wheat growers that his government expects wheat sales to continue at relatively high levels for some time to come. He outlined his government's objective which is to see that 550 million bushels of wheat are moved during the present and each of the next 2 crop years. This would mean exports of 400 million bushels per year and a domestic use of 150 million bushels.

Under these circumstances, it is obvious that this is not the time to initiate a new policy such as export subsidies. Such a system would impose restrictions and limitations on wheat growers and upset the present effective wheat board selling system.

Nevertheless, there is legitimate concern throughout the country today about the wheat industry. Prices have, in fact, dropped. Production costs continue to rise. Farm leaders have been outspoken about the need for action at a time when the wages of city workers continue to rise and the earnings of farmers decline. Premier Duff Roblin of Manitoba has called on the Federal Government to convene a meeting with the three prairie provinces to discuss wheat price policy.

It is essential that the Federal Government act rapidly to examine the price problems facing wheat farmers and to devise an adjustment program to deal with them while still protecting the present wheat board marketing system. V

The Synthetic Threat

JOHN W. ALLEN, of the American Meat Institute, in an address to the recent Meat Packers Council Meetings in Quebec City, offered some chilly news about synthetic foods. "When you taste the most recent soybean substitutes for meat," he said, "you will be impressed how closely they resemble the flavor, texture and appearance of meat. We must realize that for a product to become substituted for another, the substituting product need not be even close to identically matching it — if price and other factors are in its favor."

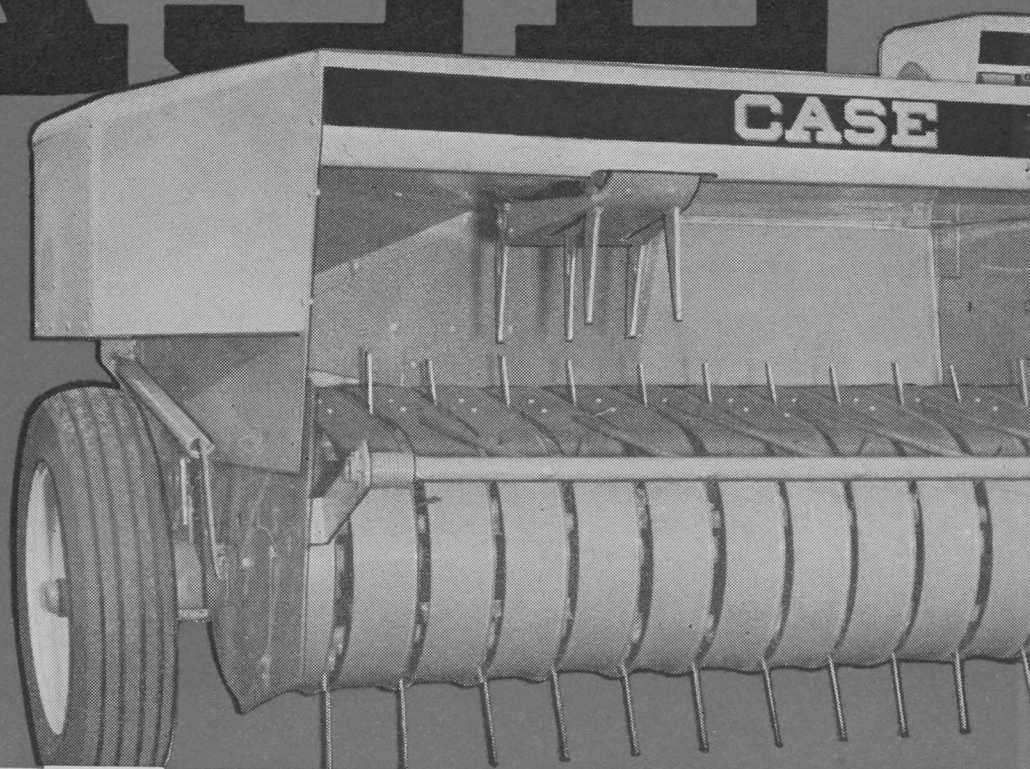
This does not mean that a juicy standing rib roast is about to become obsolete, but it illustrates the pressures of change being exerted upon the business of food production and processing. The "National Hog Farmer" observed editorially last month, "Reports of bean-fiber foods will separate the serious hog raisers from the indifferent pig handlers. A dismissal of the subject will accomplish about as much as the early attitude about oleomargarine."

A superficial view of this threat to meat production might be that farming as a whole remains about the same; that the cash crop grower benefits to the extent that the livestock man loses. But there is a further complication: the soybean is in turn vulnerable to the wider use of urea as the source of protein in ruminant feeds. For instance, an Angus heifer which recently gave birth to a normal calf had not enjoyed so much as a mouthful of natural feed since she was weaned 2 years ago. Her diet included such goodies as wood pulp and urea.

Synthetics have also invaded other agricultural markets: rayon cuts a wide swath into the cotton market, while the New Zealand wool producers look askance at the inroads nylon has made in the wool carpeting trade.

If the threat of synthetics holds any moral for us, it must surely be that there is an increasing need for agricultural research. V

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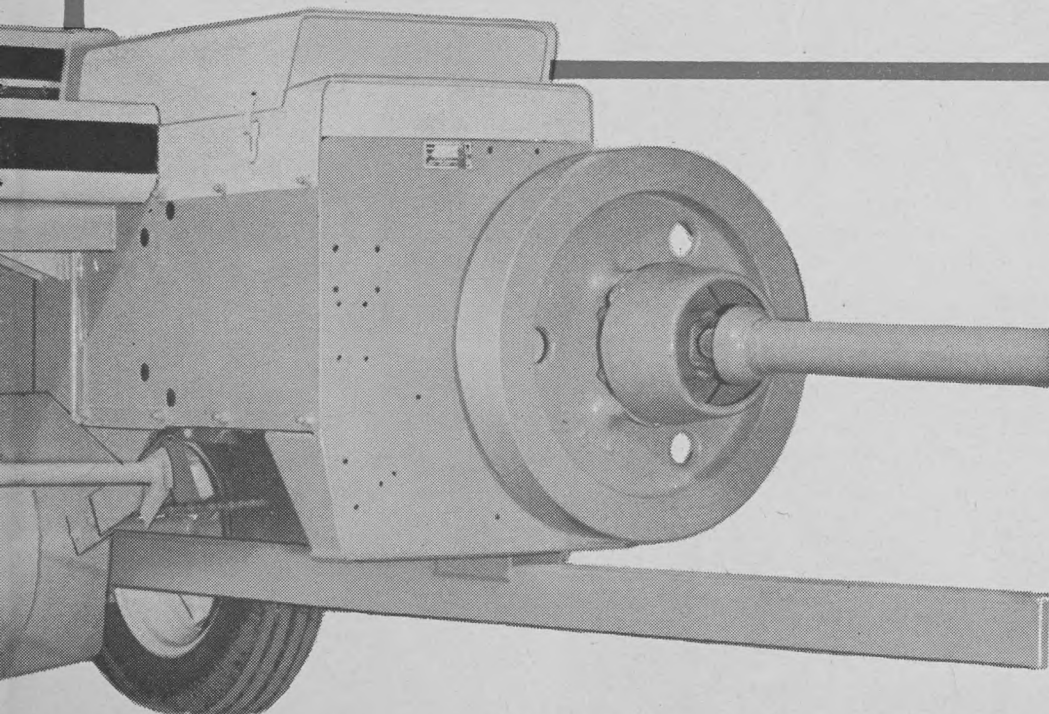
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News Highlights

The International Wheat Agreement has been extended for a year to remain effective until July 31, 1966. The action was taken at a meeting of the International Wheat Council in London.

Dairy Farmers of Canada Vice-President George McLaughlin of Beaverton, Ont., says farmers are subsidizing consumers. He says that in terms of 1949 dollars, farmers are 30 per cent lower in earning power while wage earners are 54 per cent higher. While many farmers live on depreciation, McLaughlin says 110,000 dairy farmers have quit since 1950. As a result, he says that people should not complain about government subsidies to farmers.

The first executive-secretary of the Manitoba Farm Bureau is R. O. Douglas who was formerly with the Manitoba Federation of Agriculture.

A handful of people leading the criticism against modern pesticides have done an injustice to farmers, states L. A. McLean, secretary of a U.S. chemical company. He said that with increased use of modern pesticides, the current ratio of food supply to demand can be maintained

through 1980. However, if present "meaningless restrictions placed on soil insecticides are not soon removed here in America, we shall be faced with the food problems of the next century within the next 5 to 7 years."

The "synthetic" calf born to a 930-pound Angus cow that had been fed a chemically pure diet containing urea (a non-protein organic compound made synthetically) as the only source of dietary nitrogen since she was 6 months of age, died. The calf, considered normal in all respects, weighed 51 pounds at birth and had gained 29 pounds before its death 16 days later. Scientists at Beltsville, Md., said they found neither any abnormality nor nutritional deficiency that could have caused the death.

The largest agricultural pavilion ever built at a world exhibition is to be erected at Montreal for Expo '67. It will occupy 400,000 square feet.

High support programs for lambs and wool or restrictive trade barriers won't solve the problems of Canada's sheep industry. This is the view of H. K. Leckie, general manager

of the Meat Packers Council of Canada. In speaking to the Canadian Sheep Breeders Association, he advised sheepmen to work with processors and retailers in putting a product on the market which the consumer will buy.

Despite the desire of the Budget Bureau in the U.S. to curtail government farm programs, President Johnson has defended price support programs and called for an extension of them for feed grains, wheat, cotton and wool.

The main causes of farm accidents which each year involve over 120,000 people in Canada were designated as carelessness, selfishness, ignorance, and impatience, at the annual Western Canada Farm Safety Conference.

Dust storms damaged more than 2.3 million acres in the Great Plains area of the United States in January with Texas being particularly hard hit.

All-risk crop insurance is being made available to farmers in three Alberta test areas this year. The insurance guarantees an income equal to 60 per cent of the long-time aver-

age yield for the area. Premiums protect against losses from drought, hail, frost and other natural hazards.

Earle Robertson has retired as a commissioner of the Canadian Wheat Board.

The Manitoba Farm Bureau has expressed its concern to the Provincial Government about the inability of farm income to keep pace with rising costs of goods and services, in spite of considerably increased efficiency and productivity.

A report prepared by economists in the United States Department of Agriculture says farm production is increasing three times as fast as it was 30 years ago, and as a result land diversion and price support programs will continue to be needed. Without them, technological progress would wreck agriculture.

Holstein cattle were exported from Canada to 15 countries during the past year.

While admitting that the promotion of breed milks is undesirable, a committee of the Holstein-Friesian Association of Canada has reported (Please turn to page 19)

BIG...TOUGH...EFFICIENT... it's Farmhand's newest Spreader-Loader team!



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GUIDE POSTS

UP-TO-DATE
FARM MARKET
FORECASTS

WORLD WHEAT PRODUCTION is on the way toward swamping even expanding markets. If this trend continues, further price reductions could follow. Hold the line on this crop to help stabilize the situation.

PER ACRE BARLEY RETURNS look more encouraging this season than for some time. Prices for this commodity have been creeping up while wheat prices are declining. Profit margins may be improved by planting more on summerfallow land.

EGG PRODUCERS can look for some easing of the tight price squeeze in the months ahead but a fairly sharp cutback in output will be required to bring back satisfactory profits.

POTATO ACREAGE expansion should be held in check despite the exceptionally favorable prices. With a normal growing season, an acreage similar to last year's should produce ample supplies in North America. Any flooding of the market will result in drastic price reductions.

RAPESEED ACREAGE will likely expand this spring, reflecting a relatively satisfactory season despite frost and drought difficulties. While price prospects for the 1965 crop are less bright, your returns per acre should remain reasonably competitive with alternative crops.

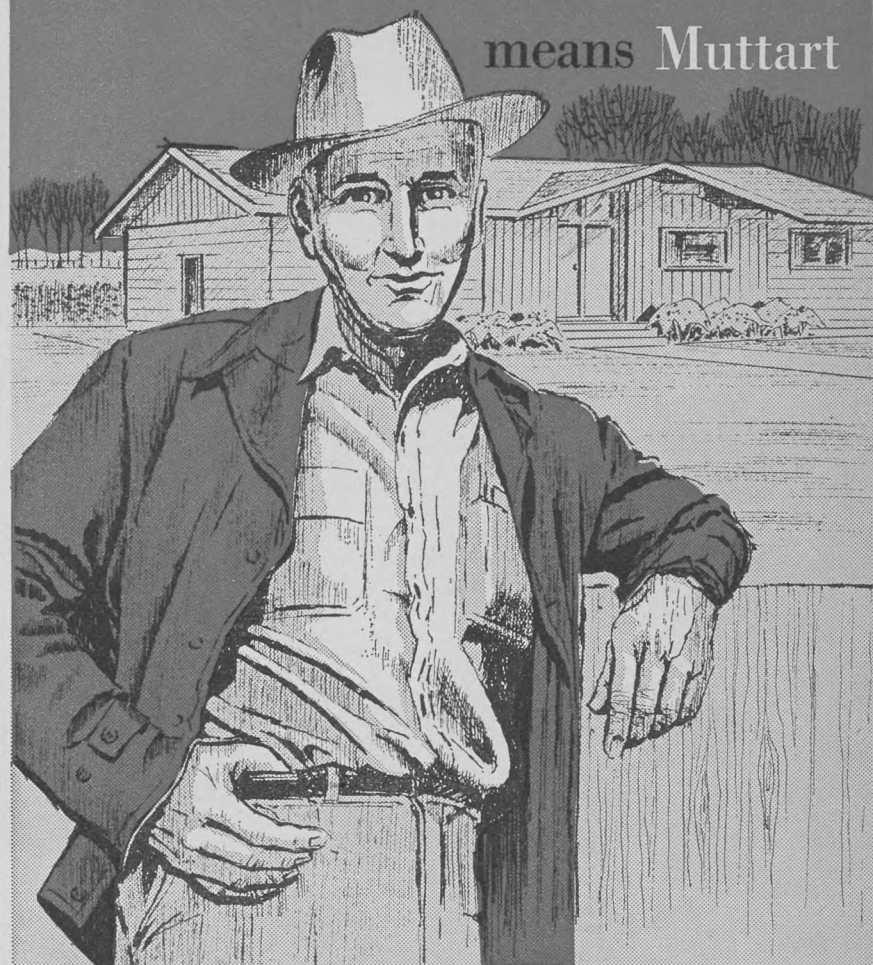
OAT SUPPLIES for the 1965 feeding season could be scarce if there is not some increase in acreage. This is still a valuable two-way crop in the prairies and provides additional fodder if drought strikes.

CORN PROSPECTS look promising again so if you have the facilities some further increase in output could be used in Canada. This crop responds well to high level management know-how.

HOG PRICES, while not likely to show much improvement, will remain firm during the first half of the year. Considerable strengthening is possible in the second half.

WORLD DEMAND FOR FLAXSEED is not expanding, which would suggest holding or reducing acreage in 1965 from last year's levels. However, carryover supplies are relatively small and a drought in any of the major producing countries would run up prices.

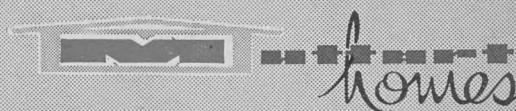
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I asked Mr. Harold Wallace, plant pathologist at the Research Branch, CDA, Winnipeg, about these products. "Safety is one of their features," he said. "Farmers will not have to

use augers for mixing, or store treated grain before seeding. They will work with the chemical out in open fields instead of inside a granary where fumes can concentrate to lethal levels. There will not be a large carryover of treated seed that may get mixed up with a shipment of grain."

The new products are diluted forms of standard seed treatment chemicals, most of them mercury treatments. Instead of mixing only ½ ounce of a 5 per cent powder with a bushel of grain, which requires thorough mixing with machinery,

you mix 2 ounces of 1¼ per cent powder. This greater amount of powder can be mixed in easily with a paddle. More powder also means more dye, enough to deeply color every treated kernel. If you see one that is not dyed you have not treated all the seed in the drill box.

Wallace added, "A little extra powder will get into the cup under each seed wheel. Every seed will have to pass through that powder before it gets to the down spout. This will insure that there will be no problems of underdosage."

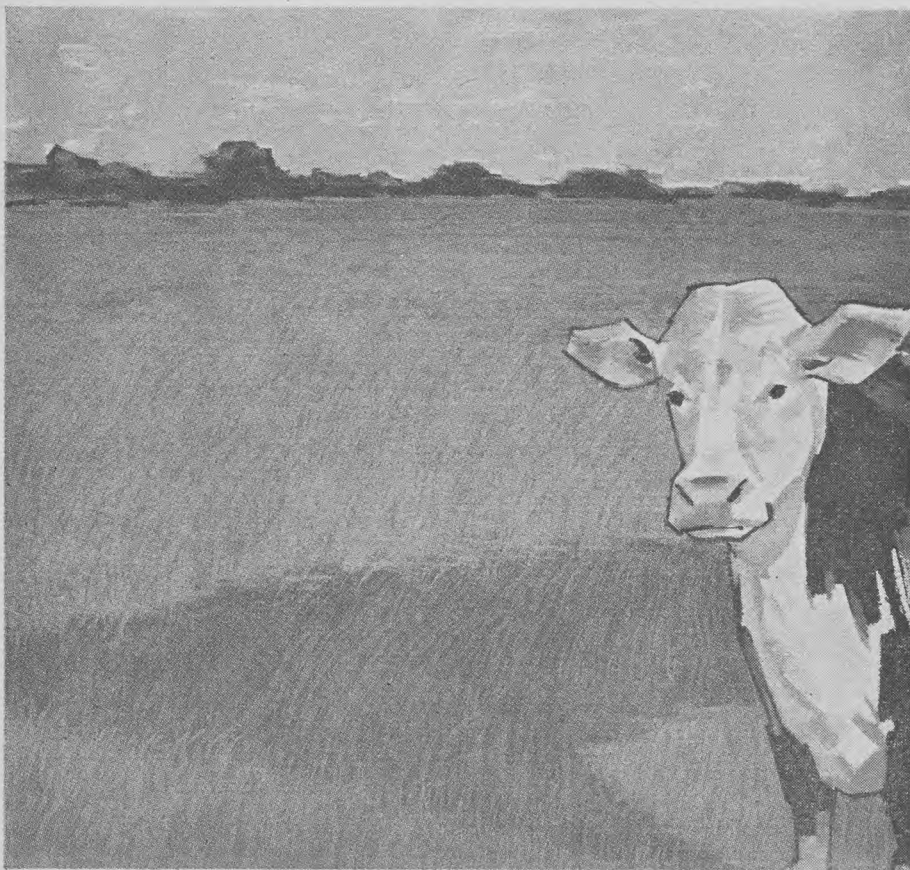
I asked him about overdosage. "A bushel of grain won't carry much more than 2 ounces of powder. If there is too much in the drill box it will get into the cups and then be pushed out with the seed and dropped into the ground. There will not be too much powder on the seed itself."

The method is simple, according to Mr. Wallace. "Half fill the drill box, spread half the powder needed on the surface of the grain, fill the box and pour on the rest of the powder. Mix grain and powder until all grain is treated. Flax may take a little longer because there will be more to mix in and flax seeds slide rather than roll past each other."

Use a paddle that is at least 2 inches wide so that as you work it along the box the grain will flow around it rather than just move aside. The handle should be long enough that you do not get powder on your hands and, of course, you must wear gloves when you work with the powder. Read the label and take all the precautions prescribed.

This new type of seed treatment comes at a time when the entire grain industry is concerned about contaminated grain. Last fall several thousand bushels of grain were condemned because of contamination with treated seed grain. The incident cost one elevator agent his job and the farmer a conviction for carelessness.

What about corrosion in the grain drill? Mr. Wallace says, "I made several inquiries but no one seems to think that there is any danger of damage. However, it is a good idea to clean the drill thoroughly at the end of the season and this cleaning will take the dust out of the cups and corners."—R.F.



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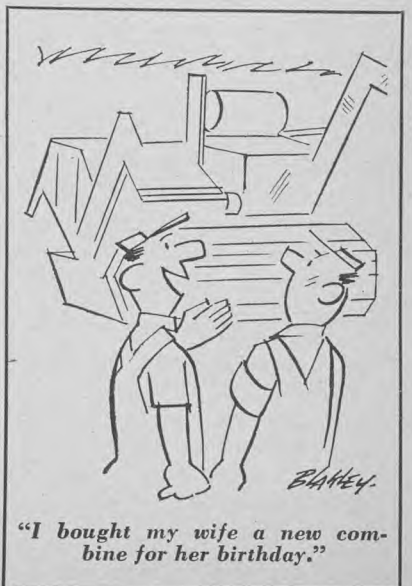
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NORTHWEST BRAND FERTILIZERS
 MEDICINE HAT, ALBERTA

"Setting the Pace for Growing Demand"



News Highlights

(Continued from page 16)
that because of the current emphasis on this technique by other breeds, Holstein breeders too may be forced into selling a special breed milk.

Broiler growers in Ontario will vote in late March on a producer marketing board. Under the plan, producers and processors would be licensed and the producer board would have authority to fix producer license fees and to establish quotas. It could also negotiate or arbitrate broiler prices.

Consumers are switching in a big way from whole milk to lower priced skimmed and partly skimmed milk, and there has also been a decided shift toward the lower fat, less expensive types of cream, says R. McCrea, president of the National Dairy Council of Canada.

Final payment on barley delivered to the Canadian Wheat Board during the 1963-64 crop year has been announced. It will average 22.6 cents per bushel compared with 18.2 cents for the previous crop year. The payment represents net returns from marketing Western Canadian barley.

A new credit service to help low-income families in rural areas raise their incomes has been announced in the United States. It provides government credit aid to many low income families who have been unable to obtain credit to improve their earnings in the past. This service is of the same nature as the Canadian Federation of Agriculture has suggested be set up under ARDA. Maximum loan is \$2,500.

Canadians consumed larger quantities of meat, poultry, milk, and cheese, tea and coffees, cereals, and vegetables in 1963 than in 1962.

A revision of the Alberta Marketing of Agricultural Products Act allowing the formation of product commissions as well as marketing boards. A marketing council with at least three members will be set up to study the marketing proposals of farm organizations or commodity groups and to set up the machinery to conduct plebiscites.

A new proposal in Britain calls for the establishment of production syndicates. The syndicate would be an integrated group of holdings managed by full-time farmers with no outside staff and organized to produce the advantages of the large scale farm.

Dr. J. R. Weir, dean of agriculture at the University of Manitoba, has resigned to become a deputy director of the scientific secretariat which the Federal Government has established in Ottawa.

Hog producers are more likely to get higher prices in 1965 than are beef producers. This is the view of Prof. R. G. Marshall of OAC who predicted in addressing the annual meeting of the Meat Packers Council that a small increase in hog marketings should not be enough to trigger lower prices. On the other

hand, he said cattle prices may be hard pressed to average out as well as in 1964.

A meat packer has called for the formation of national meat boards. General Manager J. Yarem, of Essex Packers Limited, Hamilton, Ont., called for the formation of a national beef board and a national hog board. These voluntary boards will include producer, packer, retailer, consumer and government representatives.

The National Farmers' Union has proposed a four-point action program designed to stimulate wheat exports. In a meeting with Trade Minister Mitchell Sharp, it recommended:

1. That the Canadian Wheat Board be authorized to sell more aggressively and to make additional credit sales.
2. That Canada import more goods from countries like Japan, Russia and China.
3. That Canada expand its contribution to the world food bank.
4. That funds for the Colombo Plan be expanded.

Meat packers in the United States are expected to continue to rid themselves of outmoded plants at terminal markets and build specialized plants in producer areas. This is the view of livestock marketing economist Dr. J. I. McDowell of North Dakota State University.

With two-thirds of Denmark's livestock production going into export channels, the country protects its farmers against periods of low prices on the world market through a two-price system. This means charging domestic consumers higher prices for beef, veal, pork, poultry and eggs than foreign customers are charged.

The newly-formed Alberta Commercial Egg Producers Association aims to establish a two-price egg system (one price for processing eggs and another for table eggs) or to form an egg marketing board. Members of the group are commercial egg producers in the Edmonton area. The egg marketing board idea received strong support at a poultry federation meeting in Edmonton recently.

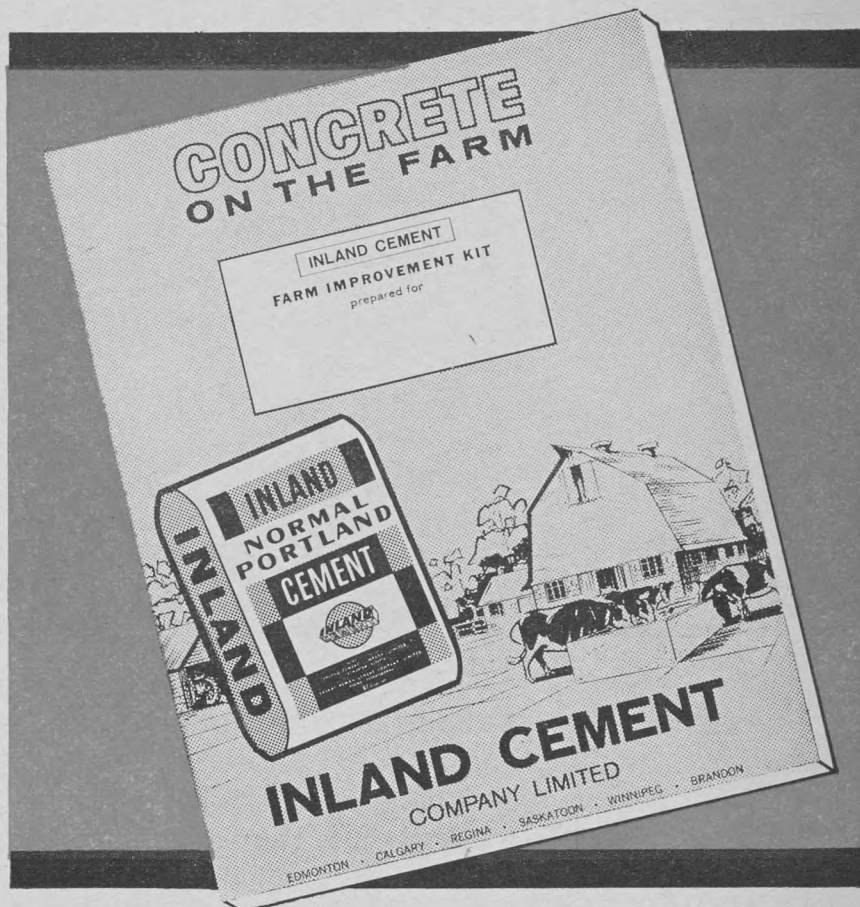
To publicize the growing bonds of trade and friendship between Canada and Japan, Canada's Department of Trade and Commerce will sponsor a nation-wide search in Japan for a young woman who will be named Miss Japan-Canada Friendship.

President Roy Atkinson of National Farmers' Union has warned that there will be a widespread decline in farm income if steps are not taken to support wheat prices. He said the government must maintain a high level of farm income even if it means supporting wheat prices.

Sales of farm implements and equipment, including repair parts, were valued at \$366,500,000 wholesale in 1964, an increase of 8.6 per cent. (Please turn to page 96)

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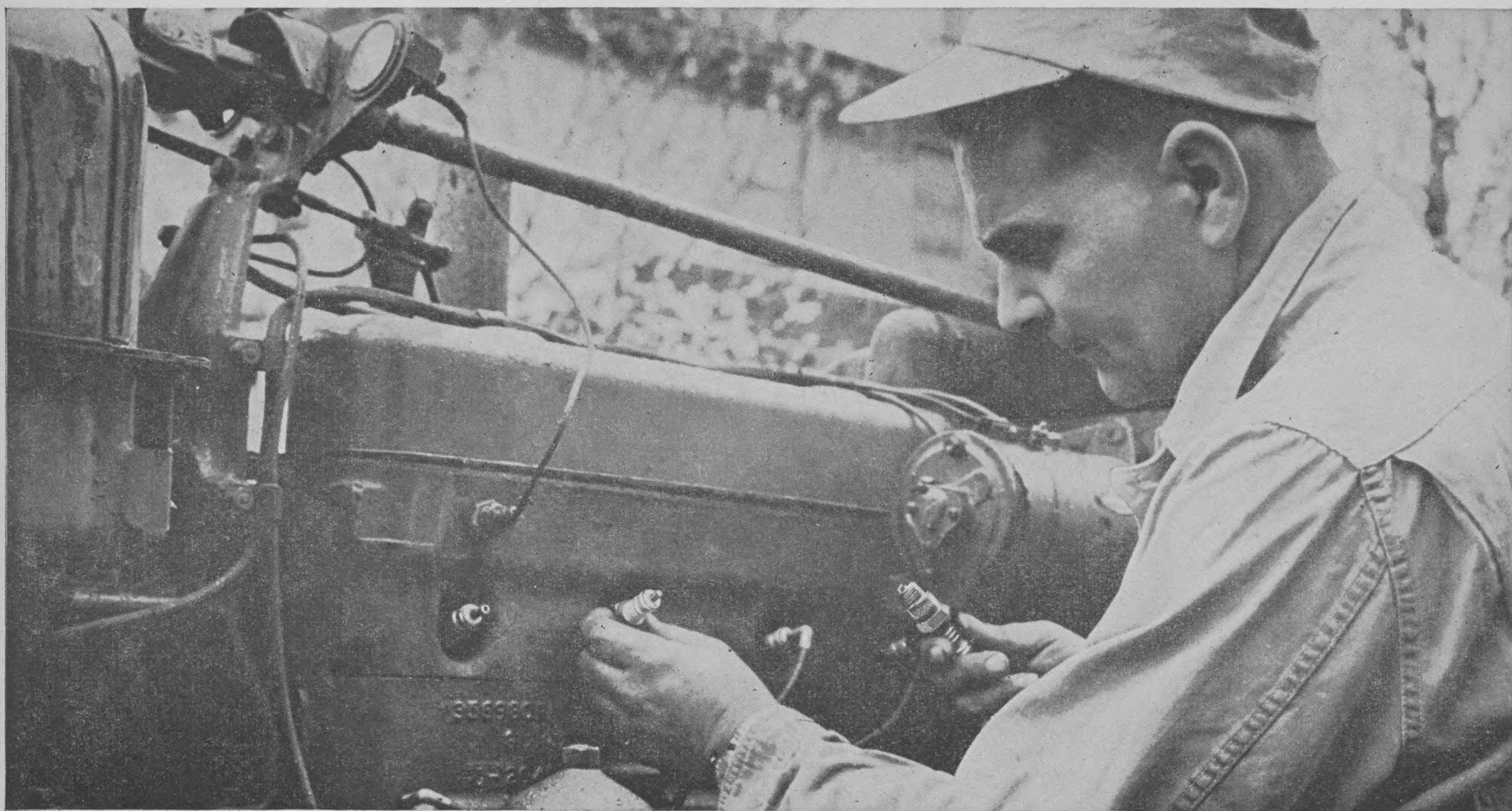
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INLAND CEMENT COMPANY LIMITED
EDMONTON · CALGARY · REGINA · SASKATOON · WINNIPEG · BRANDON

Here's how you can stop needless horsepower and gasoline losses



Studies by tractor engineers show that even a minimum tractor tune-up will restore an average 11.2 per cent of horsepower and improve gasoline economy by 13.3 per cent. Here's what the engineers recommend.

Even though your tractor seems to be operating all right, maintenance neglect takes a higher toll in lost power and wasted gasoline than you realize. And these losses result from a need for *minor* maintenance.

"Minor" Tune-ups Studied

In arriving at the figures of 11.2 per cent loss in horsepower and 13.3 per cent loss in gasoline economy, the engineers made the following tune-up operations:

1. Adjust carburetor
2. Service air cleaner
3. Set timing
4. Adjust governor
5. Replace spark plugs

In some cases, points and condenser were also replaced. Of these five operations, spark plug replacement pays the biggest returns when a tune-up is needed.

Plugs Pay Off Fast

Tests show that replacing *spark plugs alone* can restore 6.7 *per cent* of horsepower and improve gasoline economy by 7.9 *per cent*. This was proved by tune-up studies and in hundreds of "borderline" spark plug tractor tests made by agricultural colleges and by engineers over the past few years.

In these tests, all evidence points to the fact that the most economical time for replacing tractor spark plugs is every 250 operating hours. Since the average tractor operates about 600 hours a year, twice-a-year plug changes will meet the average tractor's need.

When To Tune-Up?

Experts recommend a six month plug change. It can mean an increase of 6.7% more power—and can cut running costs by 8¢ in every gas dollar. It's just plain uneconomical to try to 'stretch' plug life.



CHAMPION SPARK PLUG COMPANY OF CANADA, LIMITED
WINDSOR, ONTARIO

CHAMPIONS — FIRST CHOICE OF TRACTOR MANUFACTURERS



John Vaselenak in his feedlot

Integrated Farm

This Albertan turned a small farm into a high producing one

by CLIFF FAULKNER

Field Editor

WHEN YOU TAKE A LOOK at the John Vaselenak farm, just east of Coaldale, Alta., you begin to believe the experts when they say we haven't even started to tap our full production potential. The 480-acre farm supports not only the Vaselenak family, but two hired men and their families as well, and probably helps support a fourth family through the purchase of two-thirds of the grain consumed by the farm's 325 head of feeder cattle.

John has found that the way to turn a small farm into a big producer is to have a good supply of reasonably priced irrigation water, commercial fertilizer and manure, and to arrange the cropping program so that each crop complements the other.

Each year he grows about 80 acres of sugar beets, 65 acres of canning peas and 70 acres of alfalfa hay. The remainder of his acreage is sown to soft wheat, oats and barley. All of these crops reach maturity at a different time so that there is very little overlapping of harvest operations. All of them contribute either feed or bedding to the feeder enterprise. In turn, the cattle provide enough manure every year to fertilize about 60 acres.

"It's like the spokes of a wheel," said John, "each one helps to support the other."

Looking back over production records for his sugar beets, he finds that his land is producing more now than it did 20 years ago. From 1945 to 1954 his production averaged 15.86 tons of beets per acre. In the 1955 to 1964 period, yields averaged 18.96 tons per acre. John feels that the manure and fertilizer applications and his crop rotation system have made this increase possible.

John actually has two rotation systems in operation. Hay land is rotated every 4 years, and pea, beet and grain crops follow each other in

succession. For instance, when an alfalfa field is plowed, it is sown to peas. The next year it grows a beet crop. The third year it gets either oats or barley, and the fourth year it is sown to wheat. The field then goes back to alfalfa, which is a good soil builder as well as a good forage crop.

"The only time we ever summerfallow is when we want to level a piece of land so that it will be easier to irrigate," John said.

Both the peas and the sugar beets are grown under contract. For the peas, John prepares the seed bed, then later irrigates the crop and sprays for weeds. The canning company sows and harvests the crop and stacks the pea vines for silage. The grower can keep the silage for feed, as John does, or allow it to be sold to a feeder for \$12 per ton. Irrigation water costs the grower a flat rate of \$2.50 per acre.

In the case of sugar beets, the company supplies the seed, but the grower has to do the sowing, cultivating and harvesting. New beet machines are making this job a lot easier than it used to be. John and his two helpers can now harvest about 100 tons of beets a day. Years ago, it took a man a whole day to harvest 6 tons. The beet tops are windrowed and left in the field to be hauled in on a day-to-day basis. They are fed to the calves during the first part of the feeding period.

John buys weaned calves of 425 to 470 lb. weight near the end of October, or during the first week of November. For the first 3 weeks they are fed dry baled hay, plus 2 lb. of whole oats per animal per day. In addition to this, they begin to get the beet tops soon after arrival.

In the fourth week, the grain ration is increased to 4 lb. During the second month the oats are gradually replaced with rolled barley. Hay, salt

and bone meal are offered free choice throughout the feeding period. The beet tops are used up by the end of January, and the peavine silage is substituted. This is enriched by adding beet molasses at 2 to 2½ lb. per animal per day. All this time the grain ration is gradually increased until the animals reach full feed (up to 15 lb. of barley apiece per day) about March 1. At this point, they are implanted with a growth hormone.

The peavine silage lasts until about May 15. To replace it, dried molasses beet pulp pellets are mixed with the grain ration at 3 lb. of pellets a day per steer. The grain is carried to feed troughs every day until the first of March, then the animals get it from a self-feeder. This releases John and his men so they can get ready for the spring plowing.

The first loads of fat cattle leave the feedlot about July 15, and the lot is all sold out by the end of August. After all crops are harvested, the feedlot is cleaned out ready for the next shipment of calves for winter feeding. This is when the manure is spread to build up the land for the next round of cropping.

John Vaselenak was raised on a farm about 4 miles south of his present location. He has never worked at anything but farming. When he decided to go out on his own he worked as a hired hand until he earned enough to get started. About 20 years ago he bought the first quarter section where his home (Country Guide, November 1964) is now situated. He began cattle feeding with about 70 head in 1948. As he acquired more land, he got more cattle.

"I don't say the way we farm is the best way to do it," said John. "Sometimes we keep our cattle a bit longer than necessary because we try to fit them in with the rest of our farming program."



Grain is hand spread until calves go on self-feeders at the end of March



Grain storage hopper becomes a feeder when the bottom boards are removed

Why Fertilizer Use Climbs

**The swing to intensive farming is
resulting in greater use of fertilizer**

by **ROGER FRY**
Field Editor

NEED A BIGGER FARM to provide extra income for a married son?

Before you sell the place and go looking for a new farm, see what you can do by increasing your production with fertilizer.

Earl Carlisle of Hayfield, Man., started to fertilize his hay crops 3 years ago and now gets twice the yields. Two years ago he began to fertilize his grain crops and to cut back on his summerfallow acreage by growing grain on stubble. His program is paying off. "We have added 20 or 30 head to our cattle feeding operation since," he says.

Earl is only one of thousands of farmers who are increasing their use of fertilizer. The story can be told in many ways: in new fertilizer plants being built, in the growing popularity of high-analysis fertilizers, in the increasing use of soil-testing services and in new methods of handling and spreading fertilizer.

By 1966 there will be five companies in the Prairie Provinces producing 1,620,000 tons annually.

Sales in Manitoba rose from 35,000 tons in 1962 to 60,000 tons in 1964 and officials predict 400,000 tons by 1973. One fertilizer official estimates prairie consumption in 1973 will approach 2,000,000 tons.

Manitoba soil-testing services will turn out 10,000 reports in the 1964-65 season. Ontario Agricultural College expects 62,000 soil samples from 17,000 farms. Fertilizer agents say their customers are following the recommendations contained in these soil test reports.

All this reflects sweeping changes in farm fertilizer practices.

I talked to John Leppington, a fertilizer agent at Brandon, Man. He says that chemical weed control and soil testing have had a lot to do with his increased fertilizer sales. The customers who followed the soil test recommendations for stubble crops had such good results that many of them have started continuous cropping. Chemical weed control makes it possible to do this without losing ground to the weeds. "Now that we are using fertilizer and chemical weed control, the only extra we need to grow a crop is moisture," said John.

Continuous cropping makes a farm bigger without adding acres. Economists say that this is the best way to increase gross returns. A study of Manitoba farms showed that the net return on \$1 invested in more land would be \$0.03 while the return on money spent for additional operating cost such as fertilizer would be \$0.46. Dr. D. A. Rennie of the University of Saskatchewan reports that land prices in Saskatchewan rose 17 per cent last year. He says that, at present land costs and yield levels, doubling the farm size would give little or no increased net return.

What about markets for this extra production? Will the increased use of fertilizer simply hasten the day when wheat backs up in the farm storage? This problem isn't troubling John Murta of Graysville, Man. He has turned to continuous cropping to increase his farm income but much of the extra production is flax, rapeseed and peas. Agricultural officials are optimistic about the rapeseed market. This is one crop that has good market prospects.



Earl Carlisle markets the extra hay and grain from his fertilized fields by feeding it to more beef cattle [Guide photos]

Keith Campbell, at Brandon, Man., who has never bothered with summerfallow, has regularly used fertilizer on his entire 380 acres of cultivated land. Keith has a rotation of 4 years grain, 1 year corn and 5 years brome-alfalfa. His dairy herd produces 380,000 pounds of milk and he sold 2,700 bu. of malting barley and 1,000 bu. of oats in 1964. The herd consumed 4,000 bu. of grain, 200 tons of corn silage, 200 tons of hay and 3 months' top quality pasture. All of this was produced on the farm. The two main inputs for this farm are 10 tons of dairy concentrate and 13 tons of fertilizer.

The rapid rise in fertilizer sales has meant the quick development of virtually a new industry. On the prairies in 1950 a single company offered two formulations to prairie farmers; today four companies offer a multitude of formulations. In 1950 there was one dealer in each area, now there are up to five dealers in each town. Fertilizer dealers today lend tractor-drawn spreaders to their customers for broadcast applications and wonder when bulk storage and custom blending to soil test specifications will become a part of the service they will have to offer their customers.

In Ontario, bulk service is already established. One dealer says that 40 per cent of his sales in 1965 will be in bulk. Bulk trucks have been tried for delivery and custom spreading. Some dealers find this satisfactory, others have had to discontinue this method due to the high cost of operations and repairs and problems of driving onto fields with a truck and a 9-ton load of fertilizer.

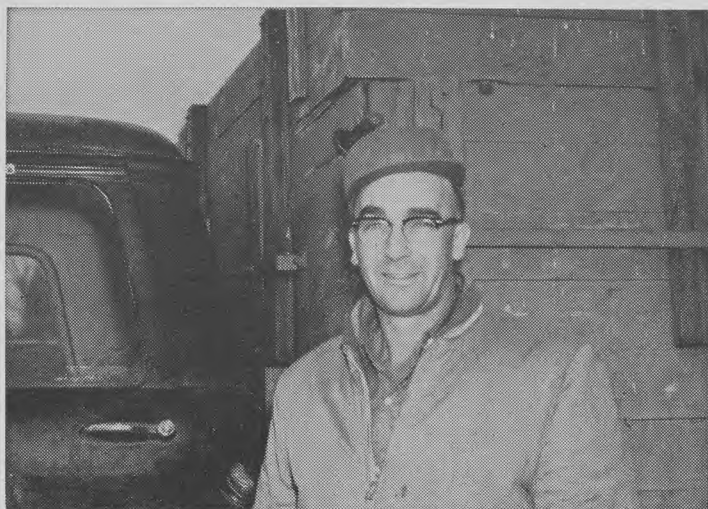
The London, Ont., plant of Agrico began testing tractor-drawn spreaders in 1962. The farmers they served found this so satisfactory that Agrico has two 4½-ton-capacity spreaders working from each warehouse. Farmers rent these for \$2 per ton spread.

The Ilderton Middlesex Farmers Co-operative has a further variation. Farmers pay \$6 per ton spread which includes the delivery charges, the spreader, a tractor and an experienced driver. The added advantage is that all the fertilizer is accurately applied. The bulk fertilizer is \$5 per ton less than the bag price; additional out-of-season and volume discounts are also available.

Dr. B. C. Matthews, of the Soil Science Department, Ontario Agricultural College, points out that the wide choice of fertilizers and materials available today gives the farmer an opportunity to save money by careful buying. His soil test report shows which nutrients and how much of each he needs. These can be applied in several ways: by using mixed fertilizers, by mixing single nutrient materials, and by using a combination of both types. "The total cost is often not the same," says Dr. Matthews, "yet each is equally effective as far as the crop is concerned."



Some dealers lend or rent broadcast spreaders to put fertilizer on customers' fields



Alf Hammer, farmer-president of Olds Co-operative Assn. Ltd.



Plastic-lined bulk fertilizer storage at Olds Co-op

(Guide photos

Bulk Handling and Blending

"HANDLING FERTILIZER in bags makes no more sense than handling grain in bags." So say the advocates of bulk handling in central Alberta and most of them are willing to back up their beliefs with hard cash. Farmers who have gone to bulk are using what they save in handling costs to buy more fertilizer, while distributors are building or planning new bulk handling facilities.

Complained one manufacturer's representative when he heard about these goings on: "We haven't even made up our minds whether we want to go into large-scale bulk sales at this time." It could just happen they will have their minds made up for them by the rush of events.

In Red Deer, National Grain, Canada Packers and the Alberta Wheat Pool have applied for sites to erect storage bins. About 20 miles west, at Eckville, the local co-operative has put in six 40-ton plastic-coated steel bulk fertilizer storage units. The Olds Co-operative has installed two such bins, and will deliver by bulk truck which spreads the fertilizer right on your fields. It also

This trend means lower fertilizer prices, lower labor costs. Now, some distributors are getting ready for individual prescriptions

by **CLIFF FAULKNER**

Field Editor

has plans for a bulk storage building — even a blending and mixing plant. At Red Deer and Didsbury, United Grain Growers Ltd. agents let both drill and broadcast-type spreaders to farmer customers. The Red Deer elevator sold 150 tons of bulk last year, some of which was brought in from Fort Saskatchewan and Medicine Hat by truck.

At Belle Plaine, Sask., farmers H. Clark, W. Newman and J. Harlton got together with U.G.G. agent S. Brooks, and ordered 10 to 16 tons of fertilizer apiece last spring. It was shipped from the plant of Northwest Nitro-Chemicals at Medicine Hat in a 60-ton hopper car. The fertilizer was dropped through hopper doors in the bottom and sides of the car. The farmers then loaded it into their trucks with a grain auger.

What has the farmer to gain from buying his fertilizer in bulk? "For one thing, there's a straight saving of \$5 a ton over bags," said Alf Hammer, who farms 1,400 acres about 6 miles east of Olds, Alta. "But the big saving is in labor costs. I use about 30 tons of phosphate and 50 tons of nitrate fertilizer a year, and that takes a lot of handling. I sure wouldn't want to go back to bags."

Hammer unloaded his fertilizer with a regular grain auger. He has found some signs of corrosion in the auger after he has used it for 33.5-0-0, especially if there is a bit of moisture present. He cleans the auger by running some grain through it. But most of his nitrogen comes by bulk truck which spreads it directly on the fields. This has to be done in the fall when the ground is firm.

FERTILIZES IN FALL

"I prefer to fertilize in the fall," said Alf. "It not only speeds up straw decomposition, it also puts your nitrogen where you want it early, in-

stead of in the spring when there are lots of other jobs to be done."

North of Red Deer, Geoff Hazlett has been hauling bulk fertilizer from the Sherritt-Gordon plant at Fort Saskatchewan, over 100 miles away. Geoff and his father farm 850 acres, growing nothing but barley the past 2 years.

"High land costs are making fertilizer a substitute for land," Geoff said. "More and more of it is being used in this area. When you are using a lot of fertilizer and you have to keep labor costs down, bulk is the only answer."

The Hazletts think there is some danger in storing bulk fertilizer on the farm, however. If you haven't proper storage it might get damp and go hard on you. Hauling it long distances in farm trucks is also very risky for the same reason.

"If you run into a rain shower on the way back you could ruin \$700 to \$800 worth of fertilizer," Geoff pointed out.

Alf Hammer, who is also president of the Olds Co-operative Association Ltd., joined the organization 6 years ago. At that time the Co-op was handling 60 tons of commercial fertilizer a year. Last year it sold over 2,000 tons. Hammer thinks the demand may increase to as much as four times this in the next 5 years.

Bill Hoffman, manager of the Olds Co-operative, believes that their spreader truck service did much to bring in new business, plus the fact that a lot of bush land is being cleared west of Olds and sown to grass and feed grains.

BIG FIELDS

"The bulk spreader truck works best on larger fields where soil compaction is no problem," Bill told Country Guide. This unit will lay a 48-foot-wide spread pattern at the rate of 50 to 500 lb. per acre. A good day's work will see 300 to 450 acres covered, or an average of 60 acres an hour." (Please turn to page 94)



This bulk spreader bin fits on back of Co-op truck. It contains three hoppers inside so that three different mixtures of fertilizer can be carried

Crop Spraying



[Guide photos] Weed control pays off in easier, cleaner harvesting and faster maturity

**Timing and accuracy pay off,
whether you are after weeds, insects or disease**

Spray for Weed Control

- *Early in the day*
- *Early in the season*

IT'S PRETTY HARD to farm today without having a sprayer. When it comes to weed control, insect control, or disease control, chemicals are usually essential and the sprayer is the means by which they are applied.

Timely spraying can give almost complete control of weeds, says Dr. George Friesen of the Plant Science Department of the University of Manitoba. The trouble is that most people spray too late.

How early should you spray? Dr. Friesen cites one example of proper spraying. "On one farm south of Winnipeg the 1964 wheat crop was seeded May 16-18 and sprayed about 10 days later, May 26-27. There were no weeds in that crop at harvest. On the same farm all the spraying was completed by June 5, including the oats and flax crops."

Dr. Friesen explained why spraying must be done early. A young, growing weed has little defense

against weed-killing chemicals. The layer of wax on the leaves is thin and the cells under the wax are soft. The chemicals can easily pass through these layers into the plant's food transportation system. The young plant is moving large amounts of sugars to the growing points at this time and the chemicals travel with it, quickly reaching all the growing points in the roots and tips. If spraying is delayed till the plant is more mature, the surface wax has thickened, the cells are toughened and less of the chemical gets into the plant. Food transportation is less and the chemical that does enter the plant does not move very fast. As a result, there is a lot of leaf damage but the roots and seed head are able to carry on.

Weeds that germinate with the

crop will grow out of the susceptible condition by the time the crop reaches the 6-leaf stage. Thus the most effective job of spraying is done before this time.

Age gives the weeds one other advantage. The bigger weeds protect the little ones, which come through the spraying untouched.

"Time of day is also important," says Dr. Friesen. The circulation is at its highest in the early morning as the plant rushes the first sugars produced by the leaves to the growing points. Chemicals introduced into the circulation at the same time will get quickly to the growing tissue. "To take advantage of this early activity, farmers should get onto the field before breakfast, preferably between 6 and 7 in the morning."

Spray Nozzles Wear Out

**Here's how it happens
and what you can do about it**

ACCORDING TO Dr. George Friesen of the University of Manitoba, most farm sprayers are worn. The major source of trouble is the nozzle.

The need for accuracy is illustrated by a simple point. Today, in trying to control wild oats, the aim may be to apply 2 to 4 oz. of Car-

byne per acre. Small deviations from this can be costly, resulting in waste of the chemical and crop damage.

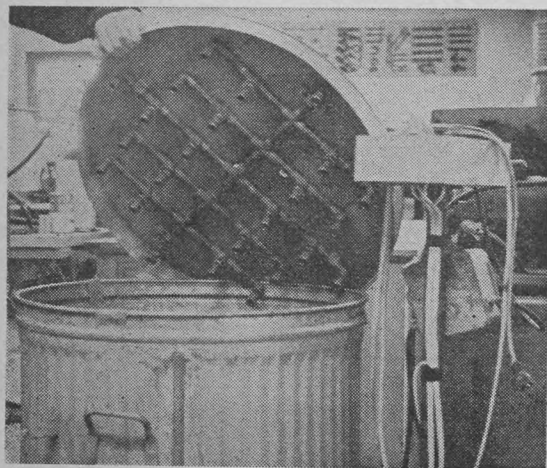
The problem is so serious that the Manitoba Weed Committee has requested work be done to find out how to properly use sprayer nozzles. M. F. Hendrickson of the Agricultural Engineering Department of the University of Manitoba has been studying the performance of sprayer nozzles.

He reports that new stainless steel nozzles do not have as uniform a rate of discharge as new brass nozzles. In fact there will only be half the variation in rate of discharge from a set of new brass nozzles as from a set of new stainless steel nozzles. However, brass nozzles wear faster and the rate of discharge from them increases six times faster than from stainless steel nozzles. As a result if you have brass nozzles you'll have to replace them more frequently than stainless steel ones.

As the nozzles wear, the pattern

of spray changes until it is too inaccurate to do an effective job of spraying.

Hendrickson suggests several practices that farmers should carry on with their sprayers: (1) Be sure that all the nozzles are the same kind and the same age. If you change one of them, change all of them. (2) Be sure to calibrate your sprayer once each year by measuring the volume it delivers to an acre of land. Mix your spray so that this volume contains the right amount of chemical for an acre. (3) Check the rate of discharge each year and change the set of nozzles when the rate increases by $\frac{1}{2}$. To do this select and mark one nozzle to be used for a check. Catch the liquid delivered from this nozzle in a set period of time, say 1 minute. Every season check the volume delivered by this nozzle in exactly the same time and at exactly the same pressure. When the volume delivered has increased by $\frac{1}{2}$, change the complete set of nozzles.



Recirculating tank used to simulate operating conditions in nozzle tests

How to Get Accuracy from Your Sprayer

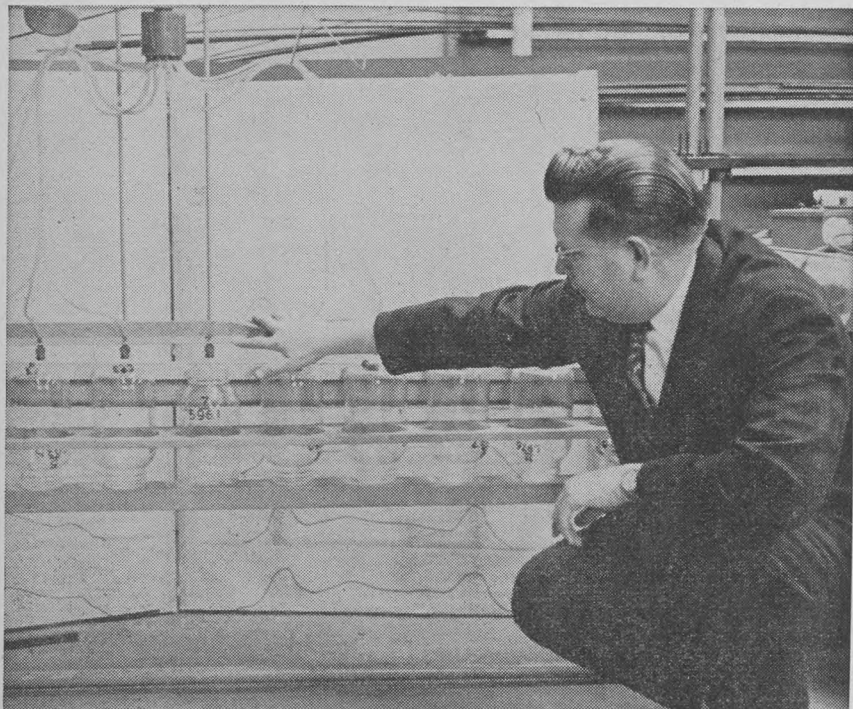
1. Never use a pin, knife, or other metal object to unplug a nozzle. Use compressed air, an old toothbrush or brush with soft bristles. Never blow into a nozzle to clean it.
2. Never allow dirty water or debris to enter the tank.
3. Control spray drift by
 - (a) using the largest nozzle and the lowest pressure that will apply the herbicide properly
 - (b) keeping the boom as low as permissible
 - (c) never spraying on a windy or even a breezy day.
4. Do not use a herbicide sprayer to apply a fungicide or an insecticide on any crop, especially one that might be susceptible to the herbicide.
5. Do not use corrosive fertilizer solutions in an ordinary weed sprayer. Parts made from brass, copper, steel, aluminum, and even galvanized surfaces may be severely damaged.
6. Never operate a sprayer with any screens or filters removed. If the screen is constantly becoming plugged, replace it with a screen with the proper mesh and capacity.
7. Never fasten a PTO-driven pump solidly to the tractor with a bar. Most sprayer pumps should be kept from rotating by means of the chain provided. Fastening the pump with a bar causes bearing wear.
8. Never allow any sprayer pump to run without water, even for a short time. Pump seals, bearings and other parts may be damaged.
9. Never leave a tank with any herbicide in it — even during noon hour. Wettable powders settle rapidly and are difficult to resuspend.
10. Always pump at least 50 gallons of clean water through the sprayer at the end of the day or when changing from one herbicide to another. Clean nozzle tips and all screens at the same time. This will help reduce gummy deposits or wettable powder accumulations in the sprayer. Leave unlined steel tanks full of clean water to reduce flaking.

How to Store the Sprayer

Proper storage will add years to the lifetime of your sprayer. Here's how to do it:

1. Clean the sprayer thoroughly.
2. Lubricate all moving parts completely, according to the manufacturer's recommendations.
3. List worn parts and order new ones.
4. Fill the tank with water and add the recommended quantity and type of rust inhibitor or new light oil (see your instruction manual). Drain the tank. Leave all tank openings uncovered for better ventilation, but screened to keep out dust and debris.
5. Clean all nozzle tips and screens with compressed air or a soft brush and kerosene. Store the tips and screens in a jar of new light oil or kerosene.
6. Remove, clean and drain the pump. Fill it with the light oil or rust inhibitor recommended by the pump manufacturer. Seal all openings to keep out dust and dirt.
7. Make certain that no water is left in the pressure regulator, selector valve or boom. They will be severely damaged if water freezes in them.

(These operating precautions come from the new Ontario Department of Agriculture publication, "Field Weed Sprayers.")



Rate of delivery is checked every 50 hours. Each jar collects the liquid from a test nozzle under normal pressure for an exact and constant time



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for Wheat, Oats, Barley,
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Liquid Merlane Concentrate *Plus* the
New "Spray Mist" Liquid Seed Treater.

NEW LIQUID MERLANE CONCENTRATE

A new development from Green Cross, Liquid Merlane Concentrate is a combination fungicide-insecticide seed dressing containing less seed damaging solvent for improved germination. 1 Gallon treats 213 bushels.

- Safer-To-The-Seed
- Promotes better stands
- Controls smut and wireworms
- Controls seedling blight
- Controls other seed and soil-borne diseases
- Economical — save 6¢ per bushel over standard, less concentrated products

NEW "SPRAY MIST" SEED TREATER

- Easy to calibrate and adjust
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- Accurate, uniform coverage
- 100% coverage of the seed
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Wheat Still King

This is the second in a series of articles by Field Editor Peter Lewington examining the problems and opportunities involved in trade in farm products

THE VAST MOVEMENTS of wheat from Western Canada in recent years and the still more recent events of price reductions have placed wheat in the national spotlight.

These two events have combined to give the western producer the stature he deserves. Farmers have long contended that a healthy state of affairs in farming is the bellwether for better times for the entire economy. While primary and secondary industry have made fantastic gains in the war and postwar years, farming is still a national spark plug; as farming goes so goes the nation. It is no coincidence that a healthy state of affairs in business was preceded by large wheat sales. Charles Gibbings, president of the Saskatchewan Wheat Pool, underlined this in his address to the Canada-Japan Trade Council: "The benefits of rising agricultural exports will flow beyond the immediate Canadian farm community. At our present level of wheat exports to Japan, it is a conservative estimate that 10 per cent of Canada's wheat income arises from sales to that country. What this means to other industries in Canada can probably best be illustrated by turning the proposition around. If farmers cut back their purchases of machinery, petroleum products, cars, trucks, chemicals and other farm requirements by 10 per cent, the economic shock would be felt in every town and hamlet."

Cash returns to Canadian farmers in 1963 were a record and last year that record was itself surpassed by 10 per cent, bringing the overall total to \$3,500 million.

Wheat sales were, of course, the big factor and the benefits quickly flowed into the buoyant national economy. New prairie homes are going up at an unprecedented rate; fertilizer purchases will likely hit 400,000 tons in the West in 1965; sales of trucks and farm machinery have continued at a merry clip. The price cuts may mean from \$50-\$75 million less in western wallets for the 1965-66 wheat crop, and this dampening effect will no doubt reverberate across the country. The significance of western wheat sales certainly did not escape "The Globe and Mail" which was moved to these poetic heights:

*"It's Northern wheat, our emblem high
Oh! Northern wheat for ever,
God bless our soil, and Chou-en-lai
And Mitchell Sharp for ever."*

This might infer that the sale of Canadian wheat was the prerogative of one man, reminiscent of Alvin Hamilton's celebrated, if unnecessary, flight to Hong Kong. As Mr. Sharp himself pointed out in an address to the United Grain Growers, "The Minister (of Trade) has his job to do, which is an important job. But the Minister

does not sell grain. That is a responsibility given to the Wheat Board by Parliament. He does not determine the selling price. That is the responsibility of the Board under the Canadian Wheat Board Act. This division is essential to preserve the integrity of the Canadian Wheat Board; to keep the Board out of politics. The Board is the producers' marketing board."

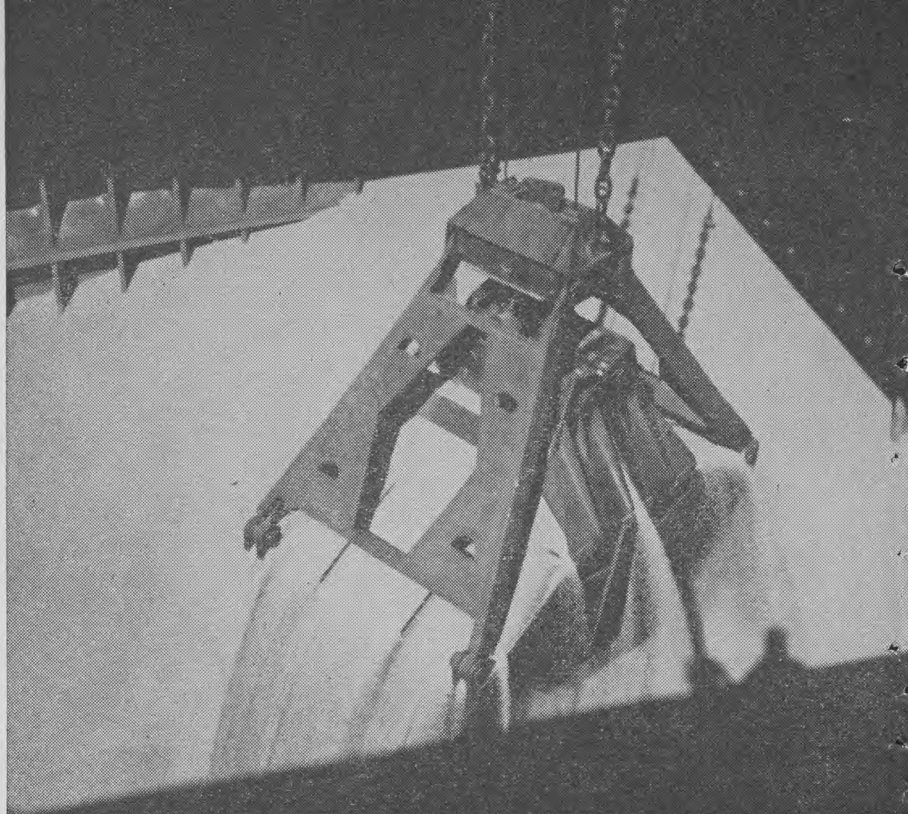
Wheat, and of course wheat flour, are big business; in Britain 60 per cent of the bread is made from Canadian flour; following the big sales to Communist China came the \$500 million Soviet contract; the Japanese market has been steadily growing and we have enjoyed the lion's share.

These developments prompted an agricultural economist to ponder whether we are becoming Asia's breadbasket. Mitchell Sharp, Minister of Trade and Commerce, stated that "the significance of long-term contracts with China, the Soviet Union, Bulgaria, Czechoslovakia and Poland is that they seem to indicate a fundamental shift in the pattern of world trade. Mainland China shows every sign of becoming a permanent importer of wheat, and on a substantial scale. The same may be said of the socialist countries of Eastern Europe, which as a group were once self-sufficient in wheat and which more recently were large importers of wheat from the Soviet Union. I do not think these countries would have been interested in agreements with Canada extending ahead 3 to 5 years had there not been a pretty fundamental reassessment of their dependence upon supplies from the Western world."

RUSSIA STILL BUYS

Russian wheat requirements stemmed from poor crops; these were partly attributed to weather, partly to the throes of adjustment and partly to the failure to master the very wheat-growing techniques which have proved successful in Western Canada. Then along came the U.S.S.R. Minister of Agriculture to reciprocate a visit by Hon. Harry Hays. Due to favorable weather and government action, crops, including wheat, had been good, asserted the Russian; no wheat purchases were anticipated from any country. In recent months, however, it has become apparent that the Russian disaster of 1963 will not be lightly overcome. Last year's agricultural output is said to be 12 per cent better. This is inadequate to recoup the earlier losses or to cope with growing population demands.

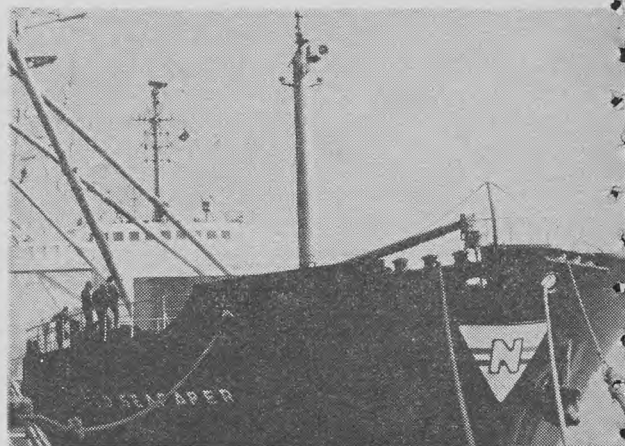
Despite Russian aspirations to self-sufficiency, Mr. Sharp's forecast has been proved correct; since August, the Russians have placed three orders totalling 25 million bushels. The latest order came at a most opportune time as it tended to stabilize the falling (Please turn to page 94)



[Exportkhleb photo]
Wheat is king of our agricultural exports



[Guide photo]
Three more orders for wheat have been placed with Canada by Russia since its Minister of Agriculture returned the visit of Hon. Harry Hays

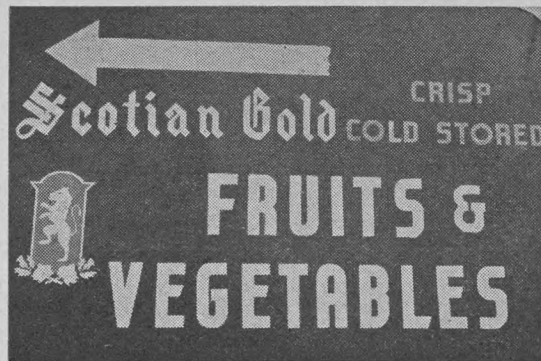


[National Harbours Board photo]
The "World Seafarer" loads 635,000 bushels of wheat in a record 4 hours. The ship's name emphasizes the nature of Canada's world-wide wheat trade



[B.V.B.C. of Brazil photo]
The quality of Canada's wheat and wheat flour is the key to big export sales around the world. This photo shows flour being unloaded in Brazil

**New food processing industries
and vast pulp and paper
expansion are giving a new lift
to Maritime farm income**



Nova Scotia's Scotian Gold Co-operative development is a further indication that farmers are ready to carve themselves a better share of the market

Better Maritime Markets

by **PETER LEWINGTON**

Field Editor

IN ALL THREE Maritime Provinces new processing plants are expanding the market potential. In some areas this has meant greater competition for what the farmer has to sell; in other areas it has meant the development of entirely new farm enterprises.

"This is a lot more profitable than milking cows," said Arthur Campbell, as he cheerily set off with another load of broccoli from his farm at French River, P.E.I. Campbell will still truck other farmers' fluid milk to Summerside, keep some beef cattle and grow about 50 acres of grain. However, his emphasis will swing toward growing vegetables for processing. Last year the Campbells grew 5 acres of cauliflower, 12 acres of Brussels sprouts and 6 acres of broccoli.

It is the same story right across P.E.I., where three frozen food processing plants have sparked a new industry for the Island. The plants are strategically located at Montague, New Annan and Charlottetown. The plants gave seasonal employment to 600 people and processed the crops from 7,500 acres in 1964. The variety of crops, and the acreages devoted to them, are both increasing. The crops include peas, blueberries, strawberries, snap beans, Brussels sprouts, broccoli, cauliflower, spinach, and potatoes for French fries. The gross returns from these crops for farmers in the Garden of the Gulf will probably exceed \$2 million this year. Already two-thirds of the cole crops grown in Canada for freezing are produced in P.E.I.; you'll find them in the chain stores in central Canada and in the food stores in Britain. The CDA experimental farm at Charlottetown is taking a keen interest in the new horticultural industry and Jack Cutcliffe is heading a research program aimed at improving fertilizer recommendations. The benefits of the new industry are accruing to the farmers; as the spokesman for one of the freezing plants put it, "Our own acreage will be devoted exclusively to experimental purposes."

In Nova Scotia a new processing development has been initiated by the farmers, for the farmers. It is part of a general resurgence apparent in the province. When he opened the new Scotian Gold plant at Cold-

brook, Premier Robert Stanfield said, "The strength of this enterprise is not represented by the physical properties, but rather by the strength and character of the people who made it possible."

The new processing plant is part of the Scotian Gold complex; facilities for marketing farm produce include cold storage for fruits and vegetables, the freezing of strawberries, rhubarb and apple slices, the processing of maple syrup and a wide range of fruits. The new million-dollar plant will permit greater efficiency of operation and also a greater variety of products. Arthur Calkin, general

manager of Scotian Gold, said, "We now have better facilities for product research and quality control. We are taking advantage of the phenomenal increase in apple juice consumption and the development of convenience foods. Apple juice is our big volume item and the time is coming when the returns from the juice will be comparable to those obtained from the processed packs."

Much of New Brunswick, from the air, provides a vista of endless forests; quite apart from the vast company and crown land forest, the average farm has 80-100 acres of woodlot. Pulpwood, some one mil-

lion cords of it, is the big volume product of New Brunswick's woodlands. Two new plants are competing for the farmers' cordwood. The \$35 million Rothesay pulp plant was recently opened at Saint John and existing companies have poured money into plant expansion.

Says Ken Brown, of the New Brunswick Department of Lands and Mines, "The demand for pulp is substantially improved and will take care of production from company and crown lands, farms and small holdings for the next decade. Traditionally there has been a problem of inadequate market facilities; now we are beginning an era of problem of supply." Competition for what the farmer has to sell has pushed up the price for quality spruce and balsam pulpwood from \$14 to \$18 per cord.

The University of New Brunswick, with its strong forestry school, is co-operating with the provincial government in improving woodlot management and the knowledge of markets for woodlot products. Says forester Bruce Kelly, "We want farmers to be better informed about what their markets are; some are unaware of the choice of markets within 20 miles of their woodlot. In an extreme case, clear black spruce was being cut for pulp, which was selling for \$14 a cord which is equivalent to \$28 per thousand board feet; instead, this should have been sold in the proper market for \$200 per thousand."

Other wood-using industries range from veneer to boxes and crates; the demand for lumber is strong and new stud mills are turning out 2" x 4" x 8's. Certified tree farms are raising the level of woodlot management and providing forest fire protection. The Maritime Lumber Bureau licenses Christmas tree graders and four New Brunswick marketing organizations are tapping the lucrative southern New England market. Only 1½ per cent of all Christmas trees marketed are graded, despite the fact that ungraded trees sell for a mere 10 cents to 50 cents while bundles of four graded trees will bring \$3.50 in the same area.

Throughout the Maritimes new marketing facilities actually in operation and the vast new developments planned for both New Brunswick and Nova Scotia, give new hope for boosting farm income.



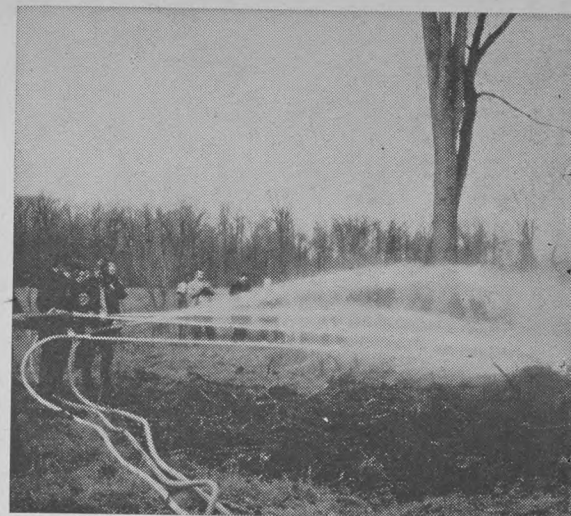
Mrs. Arthur Campbell and her son Roy are seen loading broccoli for one of the three freezing plants which have sparked a new P.E.I. industry



It took 400 pounds of Amex II for this pond blast



Later, the 80,000-gallon pond is a good water supply



Pump will deliver four high-pressure streams

Blasted Ponds for Fire Protection

"GRASS AND BRUSH FIRES are the most common hazard to farm woodlots, Christmas tree and other plantations, farm fields, farm buildings, as well as cottages and lumber yards," says Prof. A. R. C. Jones of the Macdonald College Department of Woodlot Management. In areas where this fire danger is common there are often no fire hydrants or fire departments, and owners worry about what would happen to their property if a fire got out of control. Two new developments now make it possible for owners, either singly or in co-operative groups, to get a lot of protection for a small amount of money.

PONDS

Using Amex II, a cheap explosive mixture of nitrogen fertilizer and fuel oil, Prof. R. S. Broughton has shown that an 80,000-gallon pond can be blown for \$100 to \$150 — about half the cost of mechanical digging. "There are other advantages of explosive digging. Explosives can be used in places too rough for heavy digging machinery, the dug-out soil is spread by the blast, and drainage may be better near the pond," says Prof. Broughton, a specialist in agricultural engineering at Macdonald College. It is simple to blow a pond (see plan), but results are best when an experienced man directs the job. Prof. Broughton, who has directed the blasting of three ponds in the Morgan Arboretum at Macdonald College, goes on to say, "A pond can only be constructed in slow-draining soil where there is enough seepage and run-off water to fill it. The pond is usually

Blast a water reservoir with dynamite, then get cheap, reconditioned fire pumps, and have your own, or a co-operative fire brigade

not suitable for stock without more working. Above all," says Prof. Broughton, "people should not try to mix their own blasting material."

The two older ponds in the Morgan Arboretum are quite satisfactory. Water levels change, but not seriously, and there has been very little sliding in of the sides. As natural vegetation appears on the banks the appearance continues to improve. Having a water supply, especially in the high danger seasons of spring and fall is a great relief to Bob Watson, the Arboretum foreman, whose responsibilities include fire protection and fire fighting.

PUMPS

Portable power pumping units well-suited to this sort of fire fighting are now being offered for \$400 complete with all necessary fittings and 500 feet of hose. These pumps were once the main weapons of the big forest fire-fighting organizations but have now been replaced by lighter models. They have been reconditioned and are being offered for this new job where weight is not such an extremely important factor. They can

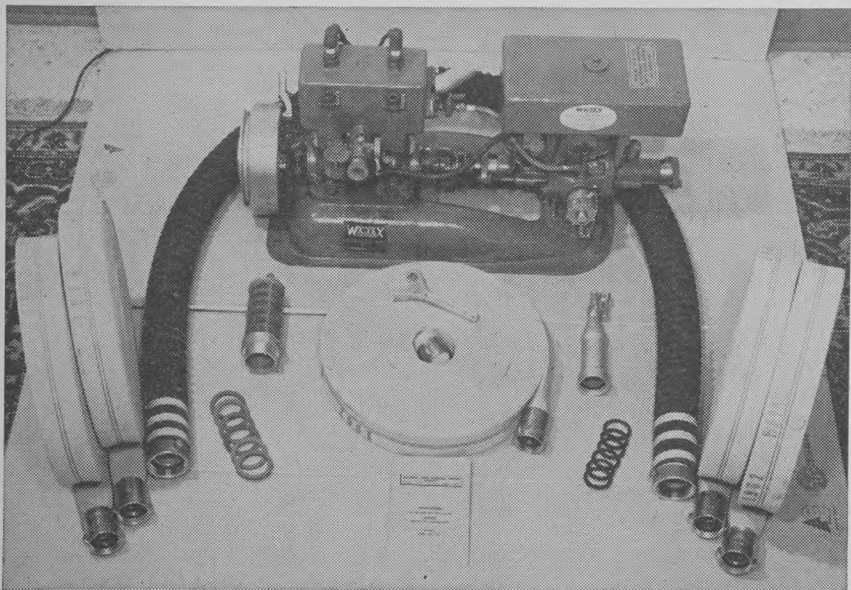
by J. D. MacARTHUR

Macdonald College

be moved quickly from pond to pond and deliver up to four high-pressure streams of water, and can also supply water for pack pumps to increase the fire-fighting force.

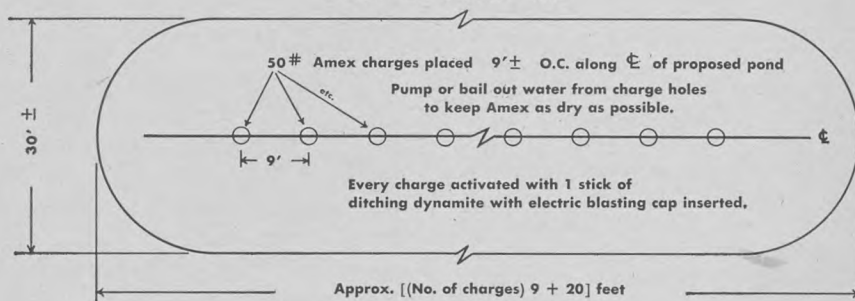
PLANNING

Taken together, the ponds and pumps add up to a lot of protection against the common fire hazard. The system can also be improved by adding some inexpensive portable hand pumps and fire-fighting hand tools such as shovels, mattocks, and fire rakes. The high-pressure streams of the power unit knock down the fires. The hand pumps and tools can then be brought into action to finish the job. Addition of a chemical wetting agent to the water can treble the punch of hand pumps. Pumps kept ready for emergency should have this chemical to provide a strong first attack on any fire. This equipment would also make it

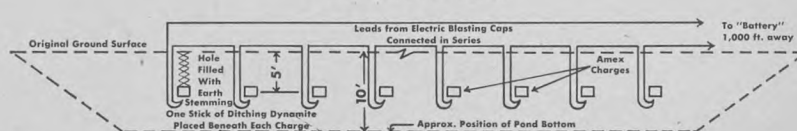


A portable power pump unit with 400 feet of hose and necessary attachments

PLAN OF POND SITE



ELEVATION VIEW



- Notes: 1. Wider ponds can be made using 2 rows of charges.
2. Holes for inserting Amex bags may be made with single sticks of ditching dynamite. Holes should be stemmed to surface.
3. Deeper ponds may be made by using closer spacing or heavier charges placed at deeper depths.

possible for a small number of people to prevent the spread of fire from one building to another.

CO-OP FIRE BRIGADE

For about \$200 each a group of six owners, for example, could organize their own co-operative fire brigade, complete with water supply, pumps, hoses and hand tools. All the equipment would be easy to maintain, highly durable, and easy to use. The power unit might be kept ready at a central location and the hand pumps (filled), and hand tools spread out among the different members of the fire brigade. The people involved could plan ahead for emergencies likely to happen, and could work out how they would

EXPLOSIVES CAN KILL YOU!

You should be at least $\frac{1}{2}$ mile from the blast. Your lead wire will have to be that long unless you are protected. Particles will be blown that far and possibly farther. If you are blasting close to buildings, be sure one window on each side of the house in relation to the blast is left open. If window glass is broken, it will be blown out rather than into the house. Be sure to notify your neighbors about an intended blast and caution the police to stop highway traffic if the explosion is within $\frac{1}{2}$ mile of the highway. If you can, blast when the wind is blowing away from buildings and power lines — much of the debris will travel with the wind.

If you haven't worked with explosives, be sure to contact an experienced blaster for information and demonstrations.

organize their fire-fighting operation. This cheap do-it-yourself fire department would give as much protection as a more expensive one.

Probably this sort of planning would lead to two additional benefits. People wishing more fire protection and planning to do something about it would probably become more aware of fire risks and do a lot more to prevent fires. If this happened, and they never had to use their fire pumps, so much the better. Also, owners who did set up their own fire department would do well to check on whether this would mean more favorable insurance rates. V



Pack pump and polyethylene tank

MARCH 1965



Seed as early as you like...

Pick your own date to kill wild oats

Delayed seeding lowers crop yields...
Avadex* kills wild oats below ground as they germinate

Now you can seed as early as soil and seasonal conditions permit — raise longer-maturing, heavier bearing varieties — without concern for wild oats. Avadex and Avadex BW pre-emergence wild oat killers destroy these yield reducers below ground, as they germinate—before they can rob crops of moisture and vital nutrients. And there is no critical timing of application. Avadex can be applied anytime *before* seeding and up to the time of crop germination. Avadex BW, for Spring and Durum wheat, can be applied anytime *after* seeding and before crop germination.

Long term tests in western Canada comparing delayed and normal dates of seeding in wheat show two very important results of delayed seeding:

- The number of wild oat plants are reduced.
- The yield of wheat is reduced.

Since the tests show early seeded wheat, competing with a full growth of wild oats, able to outyield late seeded wheat, it is apparent that the use of Avadex BW with early seeded wheat will equal or better the control afforded by delayed seeding and, at the same time, increase the yield difference. In other words a combination of early seeding and Avadex BW will develop more bushels than early seeding alone and considerably more bushels than delayed seeding. With other crops the effects are similar.

Here are the results of delayed seeding tests with controlled wild oat infestations carried out by the University of Manitoba in 1964.

FLAX YIELDS IN BUSHELS PER ACRE

WILD OAT DENSITY (Plants per sq. yd.)	NONE	50	100	150
SEEDING DATES				
May 29	18.4	10.5	7.4	7.5
June 5	16.7	9.8	6.9	5.6
June 10	11.6	3.6	2.3	0.9
June 15	10.3	1.6	0.8	0.6

(Source: University of Manitoba, Plant Science Department, Wpg., Man.)
(Note: The cost of a full Avadex treatment in flax is approximately $\frac{1}{4}$ bushels of flax per acre.)

Avadex and Avadex BW let you seed earlier... and knock out the wild oats as they germinate. With Avadex, flax can be grown as a clean-up crop. Treatment can be made two, three or four weeks ahead of seeding time, without loss of chemical or long lasting control action.

Avadex and Avadex BW give you an earlier, easier, faster harvest—you harvest more and store crops dry. And cleaner crops mean less dockage as well. Ask your farm supply dealer for the factual combined Avadex-Avadex BW manual featuring step-by-step instructions on wild oat control. Or write: Dept. D, Monsanto Canada Limited, Box 147, Winnipeg, Man.



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High quality roughages
mean profit in
Lawrence Kerr's
feeding program



[Guide photos

His Steers Suffer from Overenjoyment

*Lawrence Kerr's roughage program
turns on a variety of high quality forages*

HIGH QUALITY roughages are the key to profits in beef feeding, says Lawrence Kerr, a leading Ontario beef feeder and cash cropper. "As a beef feeder I am very much a roughage man," says Kerr, "but I am not as rough a roughage man as some."

Mr. Kerr says corn silage is his best roughage. He points out that it is suited to mechanical handling and is easy to harvest with ideal moisture content. "We plant two or three fields with a few days' difference in maturity to get 64 to 67 per cent moisture at harvest. I consider 67 per cent ideal for a 14 ft. silo and 64 per cent ideal for a 24 ft. silo to prevent seepage problems." He finds some single cross hybrids will produce as much silage as regular hybrids, and with a higher proportion of grain.

Next to corn silage Kerr prefers alfalfa and grass haylage. Producing good haylage is an exacting job but it has many advantages. Such a system extends the haying season

and requires the same equipment as corn. Hilly fields erode less when seeded to grass, and irregularly shaped fields are more efficiently handled in sod.

Haylage, with its high protein content, balances a corn silage ration extremely well. A mixture of 30 per cent haylage and 70 per cent corn silage with 2-3 pounds of legume hay will supply most protein requirements of feeder cattle.

Kerr also feeds sweet corn refuse silage because it is available, cheap and provides additional variety. He stores it in a large bunker silo, which has a concrete floor, a sump pump for drainage and 16-foot sloping earth walls.

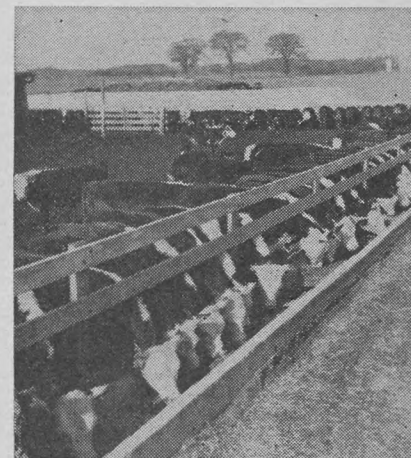
Recently, he has been using less hay in his feeding program. Kerr says that making good hay takes too much labor and machinery time. Often the process is delayed because the hay is not in the right condition. "We will have a little clear timothy for new cattle, some hay to start feeder calves on and

Livestock

1 or 2 pounds a day for the rest of the cattle, but otherwise we are aiming at more haylage and less dry hay," he says.

"To make top quality haylage we aim at 38-55 per cent moisture. We find it quite practical to mix drier material with more moist, freshly cut forage, using forage wagons and blowers to do the mixing. We find it very practical to have a few acres that are almost hay, ready to blend with higher moisture material the next morning in case there is a heavy dew or light rain. If our dry material gets a little ahead of us because of hot, dry winds, we will bale 5 or 6 tons of hay. This is top quality hay that has dried quickly without rain.

"My whole theory of cattle feeding is based on providing a quality and variety of roughage that will persuade the animal to take on a real heavy fill of the class of feed on which he will gain most economically," says Kerr. "I like to be so good to the steer that he suffers a little from overenjoyment."



Cattle will eat more high-quality forage and make paying gains on it

Wintering Cattle

"YOU CAN'T rough cattle through the winter and expect to make profitable gains on cheap summer pasture if the wintering period exceeds 4 months," says W. T. Burns, superintendent of the CDA Experimental Farm at Prince George, B.C.

"Calves must be well fed under these conditions. If the winter feeding period is short, a 400-lb.

calf can be maintained without gains and, after gaining 2 lb. per day for 6 or 7 months on good grazing, end up as an 800-lb. feeder. However, where the wintering period is long, there is just not enough good grazing time and after 4 months' pasture all you will get is a 640-lb. feeder. Simple mathematics will show the tremendous difference in returns per animal.

"The operator in long winter areas must plan to have his cattle make profitable gains for the entire 365 days of the year, not just survive winter and make it all up on summer grass," says Burns. "To do this he must have high-quality forage available all year."

Forage crops are at peak quality just before bloom stage. Digestibility of grass-legume mixtures will reach 80 per cent at this time. However, in areas of short growing season, forage matures rapidly and, as it does, quality drops. In a period of 10-14 days digestibility will be down to 45 per cent. Mr. Burns points



[Guide photo

"Up to their eyes in feed." This top grazing only lasts for a few weeks

out that if stockmen want top-quality forages for cattle during winter they must harvest it before peak quality is gone.

Burns demonstrated the need for early harvesting with a trial at the Experimental Farm sub-station at Smithers, B.C. Grass-legume forage was harvested at four stages: early, June 22-30; medium, July 5-10; aftermath, September 4-7; late, July 23-28. Aftermath was only harvested from early cut and medium cut plots. The forage, put up as silage, was fed to five groups of steer calves. The feeders were allowed to consume all the silage they could but received no other feed.

Steers on early cut silage gained 1.03 lb. per day, on aftermath 0.9 lb., on medium cut 0.6 lb. and on late cut 0.2 lb. One lb. of gain took 39 lb. of early cut silage, 45 lb. of aftermath, 60 lb. of medium cut and 86 lb. of late cut.

Since early harvesting is so important, cattlemen in areas of high rainfall during June and July may have to store winter forage as silage.

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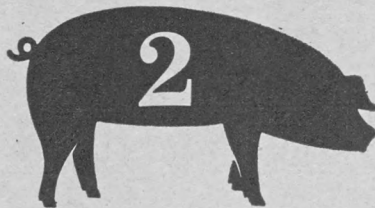
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LIVESTOCK

Carcass quality is highly heritable. A.I. could result in rapid improvement in this country's hogs



[Guide photo]

Swine A.I. Lags

Its tremendous potential is still inhibited by technical problems

SWINE A.I. hasn't followed cattle artificial insemination into orbit, despite the many potential advantages. Listed below are some of the benefits which have stimulated world-wide interest:

- The risk of spreading several significant diseases of swine would be reduced if contact between boars and sows were eliminated.
- Maximum use could be made of desirably proven boars; A.I. breeding offers the best hope for improvement in carcass quality.
- The problems associated with using heavy boars on young gilts would be eliminated.
- Group farrowings could be planned once swine A.I. is perfected and estrous control is developed. Work is proceeding at Ontario Veterinary College on controlling the heat cycle in swine.

At the Ontario Veterinary Association meetings held in Toronto, Dr. Lloyd Banbury, head veterinarian at the Waterloo Cattle Breeding Association, took a long look at the problems of swine A.I.

The costs involved in swine A.I. are much higher than those for cattle A.I.; even where swine A.I. is conducted on a commercial scale Banbury foresees first service costs of \$6 to \$8 and repeat services at \$2 to \$3. Boar semen remains viable for only a few hours which necessitates keeping numerous small boar studs in the areas where the sows are to be bred. A bull can provide the semen for 500-1,000 services per week and any surplus may be stored. At the present time a boar can only be used artificially for some 25 services per week. A diluent which would maintain semen viability for even 2 to 3 days would greatly increase semen utilization.

The second severe hurdle is that of poor conception rates. "Reliable figures," says Banbury, "show that about 86 per cent of sows farrow to natural services at the first heat period. Commercial A.I. has never achieved as high a result."

Limited test breedings, which were conducted by the Waterloo, and also by the Oxford Unit, in conjunction with Dr. Cliff Barker of OVC, were, however, quite encouraging. The Waterloo Unit, which has, incidentally, put into practice a number of newer breeding procedures, went ahead with a com-

mercial swine A.I. service. In 1963, the first full year of operation, 3,400 sows were bred. Last year the number dropped by 700 services. The conception rate is not an accurate indication of success owing to the number of sows which are subsequently rebred naturally. The farrowing rate is the important thing, and this may be as low as 25-40 per cent of the artificial services.

If swine A.I. is to be successful, insemination must be carried out only during the positive, standing heat. This appears to be generally accepted wherever swine A.I. is carried on. Britain, France, Holland, Japan, Norway, Sweden and parts of the U.S., especially Illinois, Wisconsin and Iowa all have swine A.I. programs in operation.

In Japan, where herds tend to be very small, a 70 per cent farrowing rate has been achieved with 70,000 sows. In France, farmers began to watch a lot closer for the true standing heat when they found that they had to pay for each call of the inseminator, regardless of whether the sow would stand to be bred.

While Dr. Banbury clearly sees the potential benefits of breeding swine artificially, his enthusiasm is tempered by the need for semen diluents, heat recognition, farrowing rates comparable with those from natural services and technicians specifically trained.

At the National Association of Artificial Breeders meetings, held last fall in Maine, W. D. Goeke, of the Northern Illinois Breeding Co-operative, Hampshire, Ill., described an approach to swine A.I. which is different from that which is practised in Ontario. In the very concentrated swine-raising areas of Illinois there is concern that the inseminator, in going from farm to farm, might unwittingly contribute to the spread of disease. Boar studs are maintained so that no member of the co-operative is more than 25 miles from a stud. These studs will be used unless or until semen preservation techniques make them obsolete. Farmers themselves pick up the semen at these studs; they pay \$2 per service and do the insemination for themselves. This would only appear to be practical where swine herds are large; estrous control or heat synchronization would make it even more desirable and economical.—P.L.

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LICE ARE NOT a problem on well-housed, well-fed cattle, says Dr. W. O. Haufe of the Lethbridge Research Station, CDA, Alta. Cattle suffer most from lice when there are extreme fluctuations in the weather, and when they are poorly fed. Under these conditions lice lower the animals' resistance to disease and cold weather without visibly affecting them.

Dr. M. A. Khan, entomologist at the CDA Research Station, says louse populations increase, sometimes to an alarming extent, during the fall and winter and decrease during late spring and summer. A few cattle, however, are "carriers" of heavy louse populations throughout the year. Generally, louse infestation is more common in mature than in young stock.

Lice cause continuous irritation and loss of blood resulting in unthriftiness, weakness, anemia, and abortion in pregnant cows. Animals heavily infested with lice for a few weeks may drop dead following a little exertion. You should consider this when handling pregnant, louse-infested cows that are on winter pastures and may be in poor physical condition.

In a herd every animal that is losing hair or rubbing and scratching against fences is not necessarily infected with lice; it may have other troubles. Signs of infestation are: greasy spots around the neck, brisket, abdomen and tail head and the odor of decomposing blood. The animals should be examined in a chute before treating them for louse control if these symptoms are not present.

To control cattle lice, dust each animal thoroughly along the back and neck with rotenone. Repeat in 10 days. Rotenone kills hatched lice immediately, but for every louse there are many unhatched eggs. The repeat dose catches these when they hatch.

Newest treatments for lice on the recommended list are systemic insecticides. These may be used only

on beef cattle and dry dairy animals that were treated the previous fall with a systemic insecticide to kill warbles. Systemics should never be used on milking cows or on any animal going for slaughter within 28 days.

Biting Insects

Cattle are also subject to attacks by insects during the summer months. Dr. W. A. Nelson, entomologist at the Lethbridge CDA station describes different methods of attack. The horn fly rasps the outer cells with file-like mouth parts until the skin starts to bleed. The horse fly has scissor-like mouth parts that tear and cut the outer layer of the skin severely. A horse fly bite is extremely painful.

Sheep keds are pool feeders. Their mouth parts pierce the outer skin layer and rupture tiny blood vessels beneath it. They then feed on the blood from the tiny hemorrhages they cause.

Mosquitoes are much more delicate feeders. Their needle-like mouth parts probe through the outer layer of skin right into a tiny blood vessel, in much the same way as a hypodermic needle is inserted into a vein.

Because of their painful bites these insects are an extreme annoyance to livestock and cause lower weight gains and decreased milk production.

Backrubbers impregnated with suitable insecticides will help to control insects. Keep them charged with an insecticide and observe the "waiting period" indicated on the label of the insecticide container. This "waiting period" is the interval between treatment with an insecticide and slaughter of beef cattle or freshening of dairy cows.

Synthetic insecticides are easily absorbed into the human system through the skin or by inhalation. They should not be handled without protective garments. Follow carefully the instructions and cautions on the label.

Pelleting Improves Poor Hay

IF YOU MUST feed poor quality hay, it may pay to have it ground and pelleted, according to J. W. G. Nicholson of the CDA Experimental Farm, Nappan, Nova Scotia.

Pelleted hay has several advantages. They are:

- Mechanical handling.
- Reduced storage space.
- Cheaper transport.
- Reduced feeding waste.

Cattle and sheep will eat more hay when it is pelleted. This is particularly true of low quality hay.

The cost of grinding and pelleting is the main disadvantage. The results

of the Nappan research show when pelleting is economical.

A mixed legume-grass hay, badly weathered during field curing, was fed to lambs in pelleted form with a limited amount of long hay. They consumed a total of 270 lb. in 75 days, double that consumed by lambs fed the same hay in baled form. Lambs on long hay did not maintain their initial weight but those on pellets gained a quarter of a pound per day.

The hay was valued at \$15 per ton, grinding and pelleting cost \$8 per ton. The cost of the feed consumed was \$3.02 per lamb on pellets and \$1.03 per lamb on long hay. The 19-lb. gain of the lambs fed

(Please turn to page 39)

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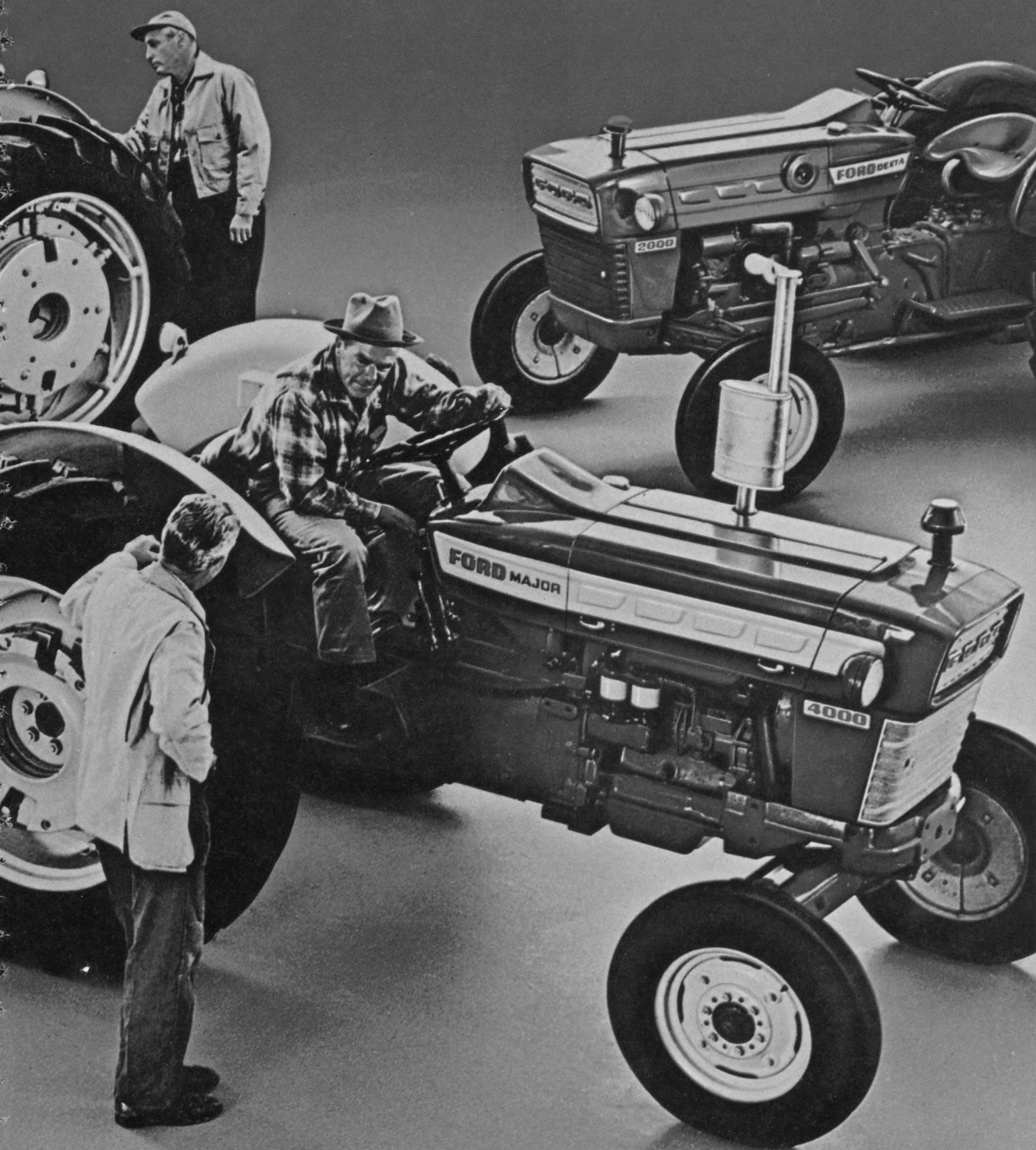
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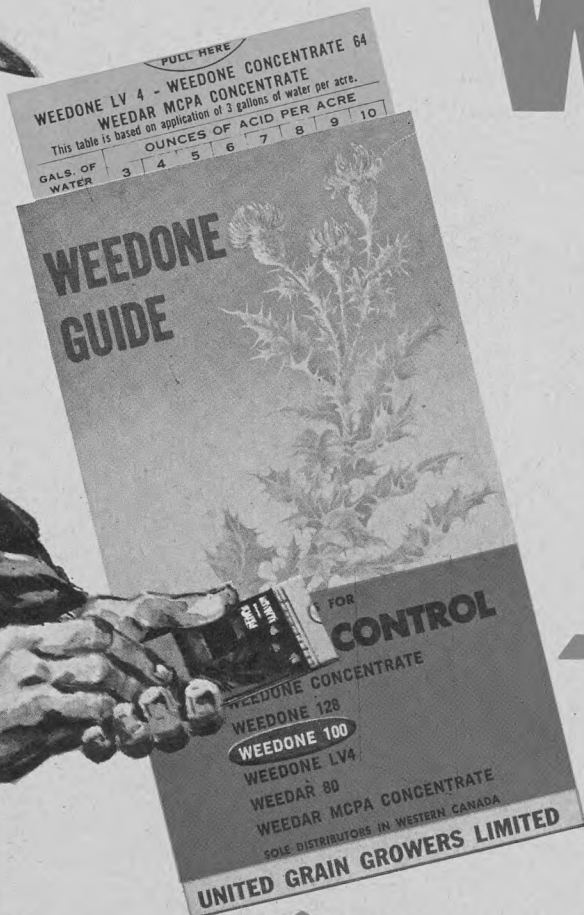
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THE FARMERS' COMPANY

(Continued from page 34)

pelleted hay cost 10.5 cents per lb. of gain for feed.

Results were similar using late cut grass hay, field-cured in good weather. Lambs fed this long hay consumed an average of 119 lb. over an 84-day period while those fed the same hay in pellets consumed 239 lb. The former failed to maintain body weight while those on pellets gained one-tenth of a pound per day. It is difficult to calculate a feed cost for this gain because the lambs fed long hay lost weight. However, pelleting resulted in enough additional feed consumption to change a weight loss into a gain.

Other lambs were fed long hay and enough rolled-barley to match the gains of those on pelleted hay. These lambs ate 107 lb. of hay and 34.4 lb. of rolled-barley compared with 239 lb. of pelleted hay. Using the same prices for hay and \$70 per ton for the rolled-barley gives a feed cost of \$2.75 for the pellet-fed lambs and \$2.01 for the barley-fed. The lambs fed pelleted hay gained 6 lb. more than those fed long hay and barley.

Feed consumption was not high enough in either experiment to fatten the lambs. ✓

Beef and Sheep Crossbreeding

CROSSBREEDING is an effective way of improving market animal production according to H. F. Peters, geneticist CDA Research Station, Lethbridge, Alta. Three-breed crosses are more effective than two-breed crosses. Hybrids usually have a lower early mortality and a higher growth rate than straightbred animals and hybrid dams produce more milk.

Sheep producers have used the three-breed cross successfully. Producing top-quality crossbred heifers for sale to breeders of commercial feeder cattle is popular in southern United States.

In trials at the CDA substation at Manyberries, Alta., hybrid yearling steers were 7 to 17 per cent heavier than steers of the parent breeds. Wide crosses such as that between the Brahman and British breeds gave the greatest hybrid advantage. Calves from hybrid cows were 7 to 27 per cent heavier at weaning than straight-bred calves. Hybrid cows were long-lived, a factor that reduces the number of animals needed for replacements.

When Romney sheep were developed, hybrid vigor was very noticeable in the first generation of the original Romney x Rambouillet cross. They surpassed the second and third generations by a significant margin in birth weight, weaning weight, yearling weight, and fleece.

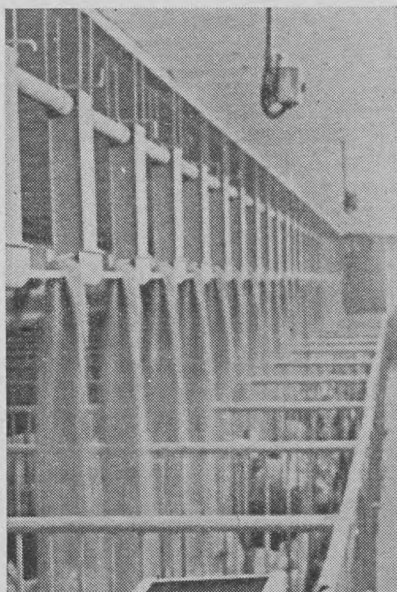
In a three-breed cross, the male of a third breed is mated with hybrid females and the loss in vigor does not occur. To take advantage of this the commercial meat producer should either raise replacement hybrid females in a separate herd or buy them from a specialized breeder. ✓

Feeding Systems for Market Hogs

CHOOSING THE right feeding system for raising pigs is just as important as selecting the right herd sire, says J. G. Norrish of the Department of Animal Husbandry, OAC.

Modern advances in feeds, equipment and ideas give reason for changing our thinking about methods of feeding market hogs.

Pig feeds are grouped into two classes according to energy value:



Equipment like this will limit feed hogs without using too much labor

medium energy and high energy. Medium energy feeds consist largely of barley, oats and supplement. High fiber feeds are added to reduce the energy content. High energy feeds

contain barley, corn and supplement, and very little fiber. Pigs can be limit or full fed with either medium or high energy feeds.

There are four systems of feeding swine:

1. Full feeding with medium energy feed — (a) pigs grow moderately well; (b) good carcass grades; (c) some feed wastage.
2. Limit feeding with medium energy feed — (a) pigs grow very slowly; (b) good carcass grades; (c) no feed wastage.

These systems of feeding do not allow pigs to grow fast and output of market hogs is less. Buildings, labor and equipment are not used efficiently.

3. Full feeding with high energy feed — (a) pigs grow quickly; (b) fair carcass grades; (c) some feed wastage.
4. Limit feeding with high energy feeds — (a) pigs grow moderately well; (b) good carcass grades; (c) no feed wastage.

This system offers the best combination of growth, carcass grade and feed utilization.

Purebred pig producers should raise their pigs on high energy feeds, with a carefully controlled full feeding program. They should use this production program to give the pigs an opportunity to express their true genetic potential for growth, efficiency and carcass merit. When commercial hog producers buy this breeding stock, they will find that the progeny can be most effectively raised by the fourth system. Limit

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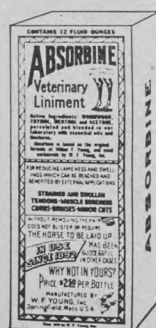
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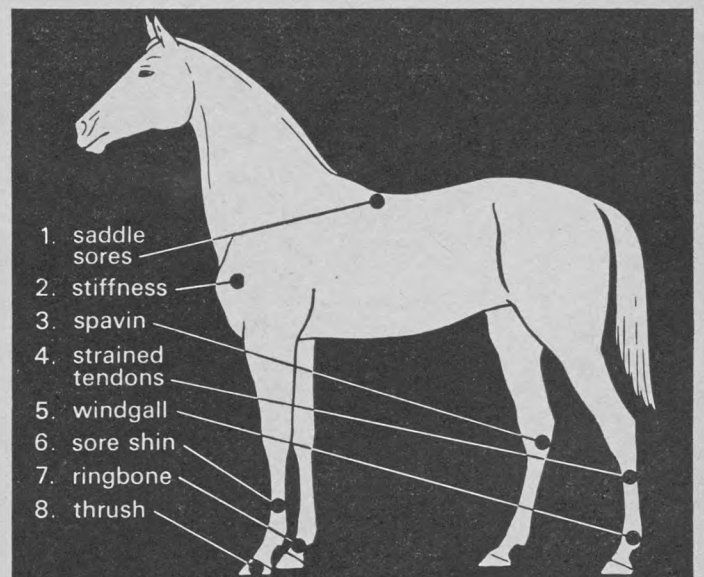
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feeding produces the following results: (a) reduces rate of growth by 2 to 3 weeks at market weight; (b) reduces backfat thickness; (c) reduces feed wastage; (d) increases length of carcass; (e) increases size of loin eye; (f) improves carcass grade. Limit feeding may improve carcass grading by 50 per cent or more.

Limit feeding will use more labor. Various mechanical feeders have been developed to reduce time and labor involved.

Floor feeding eliminates troughs and feeders. This will only work with limit feeding. Full feeding on the floor causes feed wastage. Mechanical limit feeding on the floor is efficient and sound.

A good feeding system for market hogs is to full feed with high energy feeds to 120 lb., and then limit the feed to 4½ to 5½ lb. daily to market weight. ✓

Watch for Rabies

RABIES has already spread halfway across Saskatchewan south of the Trans-Canada Highway and is expected to reach Alberta within the next 3 years, reports Dr. E. E. Ballantyne, chairman of the Central Rabies Control Committee.

Alberta residents along the Saskatchewan border are requested to report any suspected cases of rabies in skunks or other animals immediately. Reports should be made to a veterinarian, Fish and Wildlife officer, Pest Control officer or Federal Health of Animals' offices at Medicine Hat, Brooks, Drumheller or Vermilion.

Container depots for shipping suspected rabid specimens are being set up at Cypress Hills Provincial Park at Elkwater, the Fish and Wildlife offices at Medicine Hat and Brooks, Special Area offices at Hanna, Oyen, Youngstown and Consort and with the Pest Control officers on rat control at Acadia Valley, Provost and Chauvin.

According to Dr. Ballantyne, a rabid skunk is quite friendly during early stages of the disease in contrast to a normal skunk which is highly strung and scents when interfered with. A furiously rabid skunk is definitely on the offensive but 90 per cent of the time it will not raise its tail or scent. Rabid skunks cannot see well to the side and in the final stage of the disease may become totally blind.

Although rabid skunks seem to have a great affinity for cats, young dogs and cattle are the most susceptible to skunk bites. Cattle are naturally curious and often investigate a skunk with their noses and get bitten.

Health of Animals' veterinarians will investigate suspected cases of rabies in domestic animals such as dogs, cats and cattle.

Animals suspected of having rabies which have to be killed should not be shot in the head, says Dr. Ballantyne, because the brain is used for diagnostic purposes. ✓

A.I. versus Natural Breeding

THE COST OF A.I. in Alberta ranges from \$6 to \$10, depending on area, according to H. B. Jeffery, Alberta's supervisor of artificial insemination. At most units this fee entitles a farmer to three repeat services if his cow fails to conceive the first time. Last year a total of 87,000 cows were serviced by Alberta A.I. units. Sixty-seven per cent conceived during the first service and less than 10 per cent required more than three services.

Jeffery points out that A.I. costs can be compared to those of natural

breeding by adding up the cost of keeping a bull for a year. The yearly feed consumption of a bull fed 20 lb. of hay a day will be 7,300 lb. At \$20 a ton, this works out to \$73 a year. In addition to hay, most bulls get about \$50 worth of grain in a year to make the bull's total feed bill for 12 months about \$123. This would cover A.I. service for 15 cows at a fee of \$8 each.

Jeffery also compares A.I. costs to those of natural breeding by working out what could be kept instead of the bull. Perhaps two extra cows could be kept with little or no extra labor, feed or stall space. Whether or not the revenue from these cows would pay the breeding fees can be easily calculated.

Does a bull depreciate in value? The answer, says Mr. Jeffery, depends largely upon the bull's original price. A \$200 animal will not likely depreciate very much; its value may even increase. However, herd quality is likely to suffer. A \$600 bull, on the other hand, is likely to depreciate. If, after 2 years' service, he sells for \$300, another \$150 per year must be added to his cost. This yearly depreciation covers A.I. costs for an additional 19 cows.

When analyzing costs, carefully evaluate every dollar spent on A.I., Jeffery suggests. A proven sire improves the herd. In the case of a beef progeny proven sire, farmers can see how the bull's calves have performed up to weaning and through the feedlot. Similarly, a proven dairy bull can be evaluated by the performance of his daughters and their conformation. This takes much of the guesswork out of cattle improvement.

In brief, the known quality of many bulls available through A.I. make it possible to improve cattle herds. With top-quality proven sires in most areas of Alberta as close as the telephone, Jeffery suggests that cattlemen discuss using A.I. with local unit operators to see if A.I. fits into their breeding programs. ✓

Pinkeye Virus Identified

PINKEYE is a familiar problem to stockmen but the organism that causes it has remained unidentified.

The first sign is a profuse running of tears which wet the hair of the face, followed by a partial or complete closure of the eyelids, with the eye itself becoming hot, swollen, and painful. If not checked and treated, pinkeye in beef cattle can seriously reduce daily gains. In dairy cattle, it's milk production that gets hit.

One of the problems with pinkeye is the difficulty of controlling it. Up to now, nobody really knew what caused it. However, scientists at the Texas Medical Center have recently isolated a virus which they say causes pinkeye in humans. Co-operative research is now underway with animal scientists at the University of Nebraska to learn if this virus is also the cause of pinkeye in cattle.

If the researchers can definitely establish that this is the same virus responsible for causing pinkeye in cattle, then the first big step toward controlling it will have been accomplished. ✓



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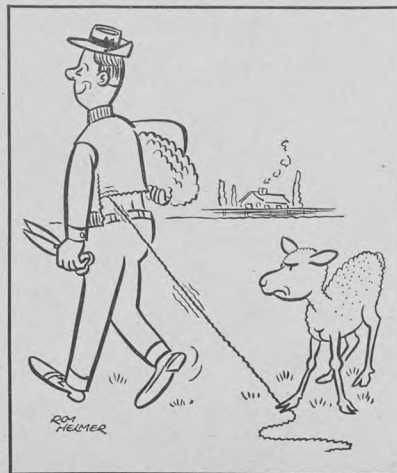


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	Complete Balanced Ration	Corn	Oats	Soybean Meal	Meat Scraps	Vitamin Mineral Pre-mix
Amino Acids						
Arginine	yes*	yes	yes	yes	yes	no
Histidine	yes	no**	no	yes	yes	no
Isoleucine	yes	no	no	yes	yes	no
Leucine	yes	yes	yes	yes	yes	no
Lysine	yes	no	no	yes	yes	no
Methionine	yes	no	no	yes	yes	no
Phenylalanine	yes	yes	yes	yes	yes	no
Threonine	yes	no	no	yes	yes	no
Tryptophan	yes	no	yes	yes	yes	no
Valine	yes	no	yes	yes	yes	no
Vitamins						
A	yes	yes	no	no	no	yes
D	yes	no	no	no	no	yes
Choline	yes	no	yes	yes	yes	yes
Niacin	yes	yes	no	yes	yes	yes
Pantothenic acid	yes	no	yes	yes	no	yes
Riboflavin	yes	no	no	no	yes	yes
B-12	yes	no	no	no	yes	yes
Minerals						
Calcium	yes	no	no	no	yes	yes
Phosphorus	yes	no	no	yes	yes	yes
Potash	yes	yes	yes	yes	yes	yes
Trace minerals	yes	no	no	no	no	yes
ENERGY	yes	yes	yes	no	no	no

*Adequate by itself for that nutrient.

**Lacks enough of the nutrient to give top performance.

Granted, it is possible to bring pigs to market-weight without vitamin-mineral fortification. In fact, they can be brought to market-weight with little more than grain and water! (Grain does contain protein and other essential nutrients.) However, there's one major thing wrong with feeding a deficient, or *unbalanced* ration . . . *it's mighty costly!*

Hogs fed an unbalanced ration, a ration that doesn't contain all the essential vitamins, minerals, proteins, fats and carbohydrates in the right proportions, will eat a lot of feed per pound of gain. You could compare this type of ration to a rainbarrel with a "short" stave. Although the top of the barrel is higher than the "short" stave, you can fill the barrel only up to the level of the "short" stave. At that level the water starts running out without "benefit" to the barrel. In a like manner, a hog will utilize feed up to the "short" ingredient in the ration . . . after that the feed passes through the hog with little, or no, benefit!

SAVE ON GRAIN AND PROTEIN WITH A BALANCED RATION

Actual tests have shown that a hog fed corn and mineral alone requires 12 bu. grain per 100 lb. gain. Fed grain, mineral and tankage he requires 6½ bu. grain per 100 lb. gain. But fed a *balanced* ration of grain, protein, minerals and vitamins he can gain 100 lb. on

less than 5 bu. of grain! The cost difference between feeding an unbalanced ration and feeding a balanced Watkins Recommended Ration could run as high as \$9.00 per hog . . . and that means \$9.00 more profit for you!

Extra profit is the main reason why you should consider M-V Special for Swine. Because M-V Special for Swine is a pre-mix that contains essential minerals, A, D and B-Complex vitamins and a low-level antibiotic, it enables you to cut feeding costs two different ways. First, M-V Special enables you to feed a *balanced* ration that hogs gain faster on. Hogs get to market-weight on less feed and at less cost!

Second, M-V Special in a Watkins Recommended Ration enables you to use more of your own, or locally grown, grain and protein. This is an important thing to consider, because most protein supplements, or complete rations, have ingredients that could be bought locally at far less cost than the cost of the commercially prepared supplements or complete rations. M-V Special will allow you to capitalize on this profit-making fact and *formulate your own balanced, high producing rations.*

Also, when you feed M-V Special for Swine in a Watkins Recommended Ration you know the quality of the ingredients in the feed because you control their selection. You

know you are using a feed with proteins that are digestible and utilized. You know you are using a feed that provides the essential minerals, A, D and B-Complex vitamins and an antibiotic your hogs must have to gain profitably. You know you are using a *balanced* feed that will get hogs to market at less cost!

WITH M-V SPECIAL FOR SWINE AND THE WATKINS RECOMMENDED FEEDING PROGRAM YOU CAN BRING YOUR HOGS FROM BIRTH TO MARKET IN 4½ to 5½ MONTHS. And you can accomplish this with 8 to 8½ bushels of corn, or its equivalent, 75 lbs. of protein and 8¼ lbs. of M-V Special for Swine for each pig. With this birth-to-market program the balance of nutrients in the ration are carefully adjusted to the needs of the pig during various stages of growth, preventing the waste of valuable ingredients. On the Watkins Recommended Feeding Program, with M-V Special, feed consumption per pig averages out as follows:

Gain Per Pig	Feed Consumed Per Pig	Lbs. of Feed Per Lb. of Gain
Birth to 50 lbs.	70 lbs.	1.4 lbs.
From 50 to 100 lbs.	125 lbs.	2.5 lbs.
From 100 to 150 lbs.	150 lbs.	3.0 lbs.
From 150 to 200 lbs.	200 lbs.	4.0 lbs.
Total Feed Consumed 545 lbs.		
Average lbs. of feed per lb. of gain 2.72 lbs.		

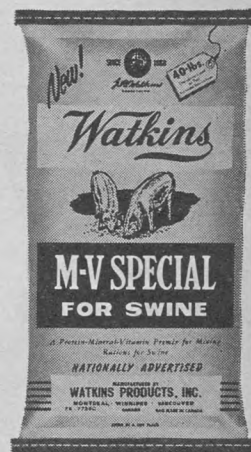
Remember, M-V Special for Swine is not just a supplement to your present feed . . . it's a way of feeding in itself!

The Watkins Recommended Feeding Program for Swine is a *total* concept of feeding. It not only takes into consideration the types of feed grains common to your area, but also provides a ration for gestating sows that helps them achieve healthier, bigger litters that are in better shape to survive, grow and give you more profit on your swine operation.

Although new to Canada, M-V Special pre-mix is a proven system of nutrition. Thousands of farmers, for many years, have been profiting with the M-V Special pre-mix concept.

When you use this system of feeding you are only spending a small percentage of your total feed dollar on M-V Special . . . yet this very small percentage is the essential key to building economical and efficient rations for gilts, gestating or farrowing sows or growing, fattening and finishing hogs.

If you are interested in making more money from your swine operation, call your Watkins Dealer, or write for additional information today! Take advantage of M-V Special's ability to help you get the most out of your hogs!



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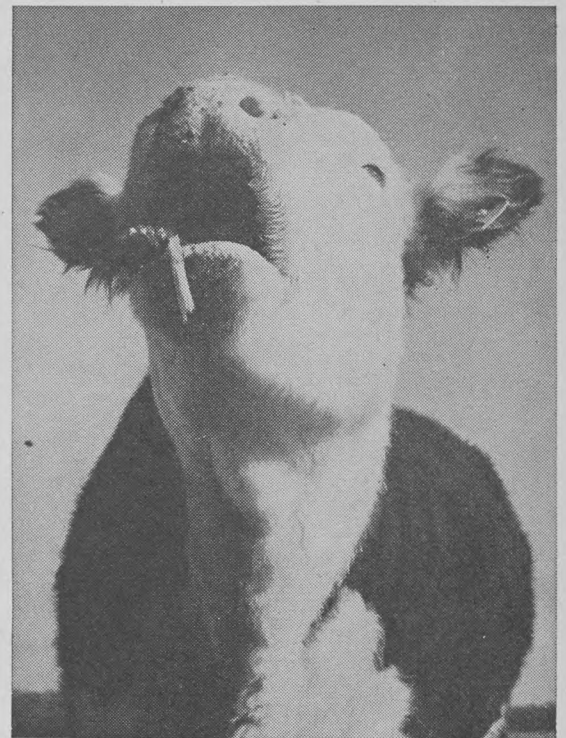
CHOOSE DEPENDABLE AC SPARK PLUGS FOR ALL THESE JOBS, TOO!
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Cattle pick a good living in the corn stover left by the combine [Guide photos]

Bovine Beachcombers

While Western Canada suffered record low temperatures, southern Ontario was comparatively balmy. At Larigmoor Farm (which also happens to be the site of our Eastern Canada Field Office), the Lewingtons' cow and calf herd thrived at little cost by scavenging in the corn field.



The word got
around that
the corn cobs were
really worth
looking for



Competition for
the cobs is keen,
because the combine
doesn't leave
too many

Select Better Dairy Replacements

THE BEST WAY for a dairy farmer to boost milk production is to start a rigid culling program, says Manitoba dairy cattle specialist Peter Herner.

Breeding cows to proven sires and buying high producing replacements are not as effective as in-herd selection. You must first obtain accurate production records. Join a dairy herd improvement association, the owner-sampler cow testing plan or the federal R.O.P. program.

A production average for each animal and an average for the herd can then be calculated from the records. Cows 20 per cent below the herd average should be sold, those near the average kept for one more lactation, and those over 20 per cent above average used as the source of replacement heifers.

"This system reveals a cow's performance potential after one normal lactation," Mr. Herner says. "She does not have to be kept around for 3 or 4 years before a decision on her future can be made."

When going outside the herd to buy replacement cows, the dairyman should be both strict and fair, the

specialist said. Individual performance should be compared to the average of the seller's herd. The top cow in a low producing herd may be a better buy than the average cow in a high producing herd. Under mediocre management, a cow that is close to the breed class average and outproduces most other cows in the herd will likely, at better levels of management, be a high producer. An average producer in a very well managed herd will be only an average producer in a herd under ordinary management.

Here is an example:

In herd A the average annual production for the entire herd is 130 per cent of the Breed Class Average and the cow offered for sale has a BCA of 120. She is 10 points below the herd average.

Herd B's average is 100 in BCA comparison but the female to be sold scores 120, or 20 points above the herd average.

In herd C the annual production for the entire herd is 80 per cent BCA, but the cow to be sold scores 120 in BCA. This is 40 points above the herd average.

The best buy is the cow from C herd. Her BCA is the same as any of the others offered for sale but her performance under mediocre management is excellent. If she were placed in herd A her BCA would be about 165 per cent.

Another good practice is to artificially breed the dairy cows with semen from proven sires with the highest production potential.

All proven bulls whose semen is distributed by A.I. units are classified according to their potential. Rating is done by the contemporary comparison or herd-mate comparison methods — comparing the daughters of similar age of different bulls within the same herd.

Manitoba dairymen who deal with A.I. units that distribute semen from Canadian bulls may obtain a rating on every bull with sufficient milking daughters to constitute proof. The Canada Department of Agriculture issues a report twice a year. This report is available from the Livestock Division, Production and Marketing Section, Canada Department of Agriculture, Ottawa.

Dairymen should plan their breeding program in advance so that the semen from the highly rated sire desired is more likely to be available. They should not be content just to get the cow bred, Mr. Herner says. V

Keep Cream Containers Clean

METALLIC, SOUR, stale and generally unclean cream is the chief cause of low-quality butter, says Manitoba dairy specialist Tom Pringle. He points out that a major contributor to these "off-flavors" is the container used for cream storage.

Once it is contaminated with "off-flavors," cream cannot be cleaned.

To store cream from time of separation until time of shipment, use containers that are easy to clean, in good repair and of suitable material. If the container has been used for some other product, it should be so thoroughly cleaned that it is completely free of odors. Some soft plastic containers always flavor the cream and should be avoided.

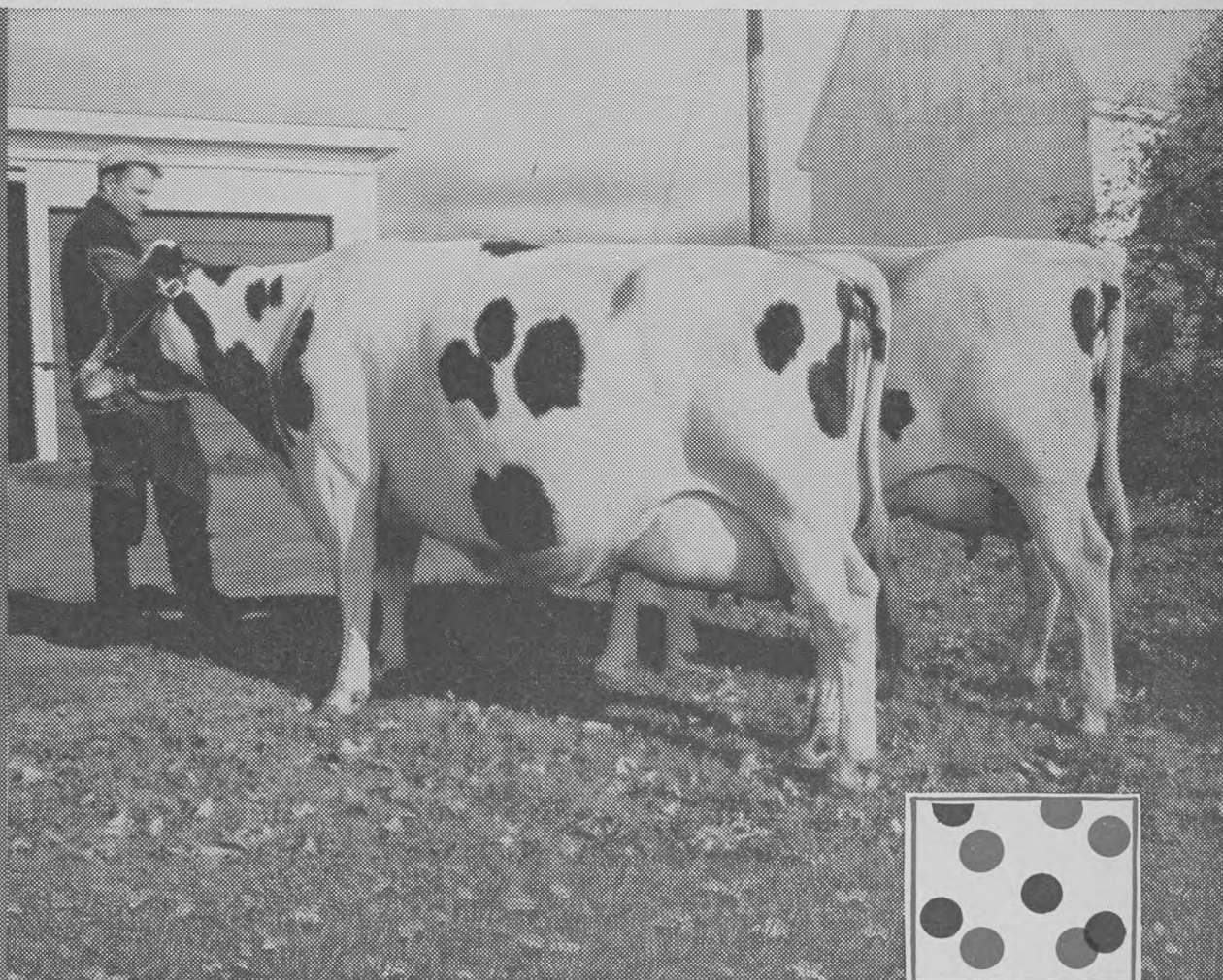
If pails or cans are used, they must have no dirt-catching, open seams; be free of worn spots; and well tinned. Antifreeze pails or fruit juice cans are poorly tinned and will impart metallic flavor to the cream.

Glass, hard plastic, stainless steel and glazed crockery containers are recommended. Tinned dairy pails, in good condition, are also suitable.

Cream should be covered at all times, cooled quickly to below 45°F. and shipped often. V

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MIRACLE



Here's more strong evidence that good blood lines and "Miracle" Feeds are a combination hard to beat! Fred McNeely, son-in-law and junior partner of Allan R. Stewart, owner of North Star Holsteins at Lyn, Ontario, is shown holding North Star Fond Mickey (V.G.) and her daughter, North Star T.M. Maggie (V.G.). "Mickey", in 5 lactations, has a lifetime total of 72,619 lbs of milk. She was Grand Champion in the Leeds County Black and White Show four times. "Mickey's" daughter, "Maggie" is upholding the family tradition. She has just finished a 305 day lactation for 11,981 lbs, and was Second Prize Aged Cow at the 1964 Ottawa Winter Fair.



Retained Afterbirth

This problem can be most serious following the long winter stabling period



[Guide photo]

Prolonged stabling and lack of exercise are among the many causes of retained afterbirth

THE AFTERBIRTH, or placenta, is the membrane which unites mother and calf. Normally the womb contracts following calving, and the afterbirth and any fluids are expelled. Sometimes the cotyledons, or buttons, which attach the placenta to the womb fail to let go and retained afterbirth results. This in turn can give rise to an infection and subsequent sterility.

Retained afterbirth is an age-old problem; notwithstanding the rugged appearance of a dairy cow, the reproductive organs are delicate—too delicate to indulge in rough removal of the afterbirth or the even cruder device of tying a weight to the protruding afterbirth. The trick is not in just removing the afterbirth but in removing it without impairing the cow's ability to conceive easily.

Dr. George Wetherill, who practices in the Listowel, Ont., area, brought his fellow veterinarians up-to-date on this old problem at their recent annual meeting. For Wetherill, 1 call in 20 is to remove afterbirth. Probably the most complete information on the incidence of retained afterbirth comes from records kept at the Carnation Farms during the period 1920-1950 and covering 7,387 calvings. Of this total, 10.3 per cent had retained placenta: 6.7 per cent of the single births, 43.8 per cent of the twins, 25.9 per cent of the cows which aborted and 16.4 per cent of those which had stillbirths had retained afterbirth.

Wetherill lists contributing causes:

- Multiple births.
- The age and physical condition

of the cow at calving time. "Overfat and overindulged animals are a bigger problem," according to Wetherill.

- Milk fever.
- The size of the calf.
- Abortion due to brucellosis.

He listed a variety of other factors involved, as well:

- Cows tend to repeat at subsequent calvings.
- Incidence is highest in cows with a gestation period of less than 275 days or more than 285 days.
- The bull influences the gestation period; there is less chance of retained afterbirth if the gestation period is close to the average for that bull.
- Prolonged winter housing and lack of exercise are contributing factors.
- Premature assisted calvings can give rise to retained afterbirth.
- There is no conclusive evidence that mineral deficiencies are a cause.

"Manual removal," says Wetherill, "should never be attempted unless it can be completed without causing irritation or bleeding. Excessive straining after calving should be relieved by a local anesthetic. To attempt removal when it is difficult can only result in an impaired cow. If the placenta does not come away readily, suppositories in the uterus will assist in warding off infection."

The success with which the afterbirth has been removed can only be judged later on; if the cow returns to complete health and then conceives readily, the job was well done.

However, a second visit may be required to remove the afterbirth, to avoid damaging the cow. That second call may well be a good investment even though it may seem to be a make-work project. As Dr. Wetherill ruefully recounted, "One of my clients refused to pay for that second call on the grounds that I was called the first time to do the job!"—P.L. v

Bulk Tanks Popular

MORE AND MORE manufactured milk producers are installing bulk tanks for cooling and storing milk. When fluid producers changed to this method most manufacturing shippers were certain that it would be a long time before their returns would warrant such equipment. Premiums offered by many processing plants for bulk milk, however, have encouraged many farmers to install bulk tanks or consider doing so.

O. R. Irvine of the Kemptville Agricultural School, Ont., advises farmers producing more than average quantities of milk to change to bulk handling, especially if a premium price is obtainable. On a year's production of 300,000 pounds, the extra revenue at 20 to 30 cents per hundred would amount to \$600 to \$900. These extra returns would soon pay for a tank and building.

Other advantages in favor of bulk handling include:

1. Handling cans is eliminated.
2. Sticking and spillage of milk are reduced and slightly better tests and weights may be expected.

3. The cost of cans is eliminated.
4. Better grades may be obtained.
5. No cooling water is needed for most bulk tanks.

Careful planning is needed to gain all the advantages from a change in milk handling methods. You should comply with all provincial regulations which apply to such installations, in order to gain approval for or to permit changing to a better market if one becomes available. v

Keep Heifers at Home

TAKE A SECOND look at the practice of pasturing dairy heifers on rented pasture away from home. Most rented pastures are on land that is no longer farmed. What pasture there is declines quickly as fertility drops, poor grasses and weeds dominate, and brush or trees begin to take over. More pasture farms become available but there are seldom any good pastures to rent. Fences break down and it does not pay to fence any other than good pastures. Heifers can be trucked to distant pastures but this is also ex-

pensive. Dr. F. A. Stinson of the Kemptville Agricultural School says that home pastures can be better.

Carrying capacities can be raised by half with fertilizer alone, and more than doubled when reseeded. The extra gains alone often pay for improvement. There are benefits other than weight gains. For example, doubling productivity reduces fencing costs per head.

When dairy heifers are put away before they are settled, a summer's milk may be lost. On the other hand, they may be bred too young at pasture. Heifers always need salt and water, and should have some protection from flies. Young stock can be set back by pinkeye, foot rot or lice unless the condition is seen and corrected rapidly.

Successful dairymen cannot lose time getting heifers into milk. They want heifers on good pasture close at hand, where attention can be given to them when needed. Most of the advantages seem to be for enough good pasture where the heifers can be seen and attended to regularly. Usually this is on the home farm. v

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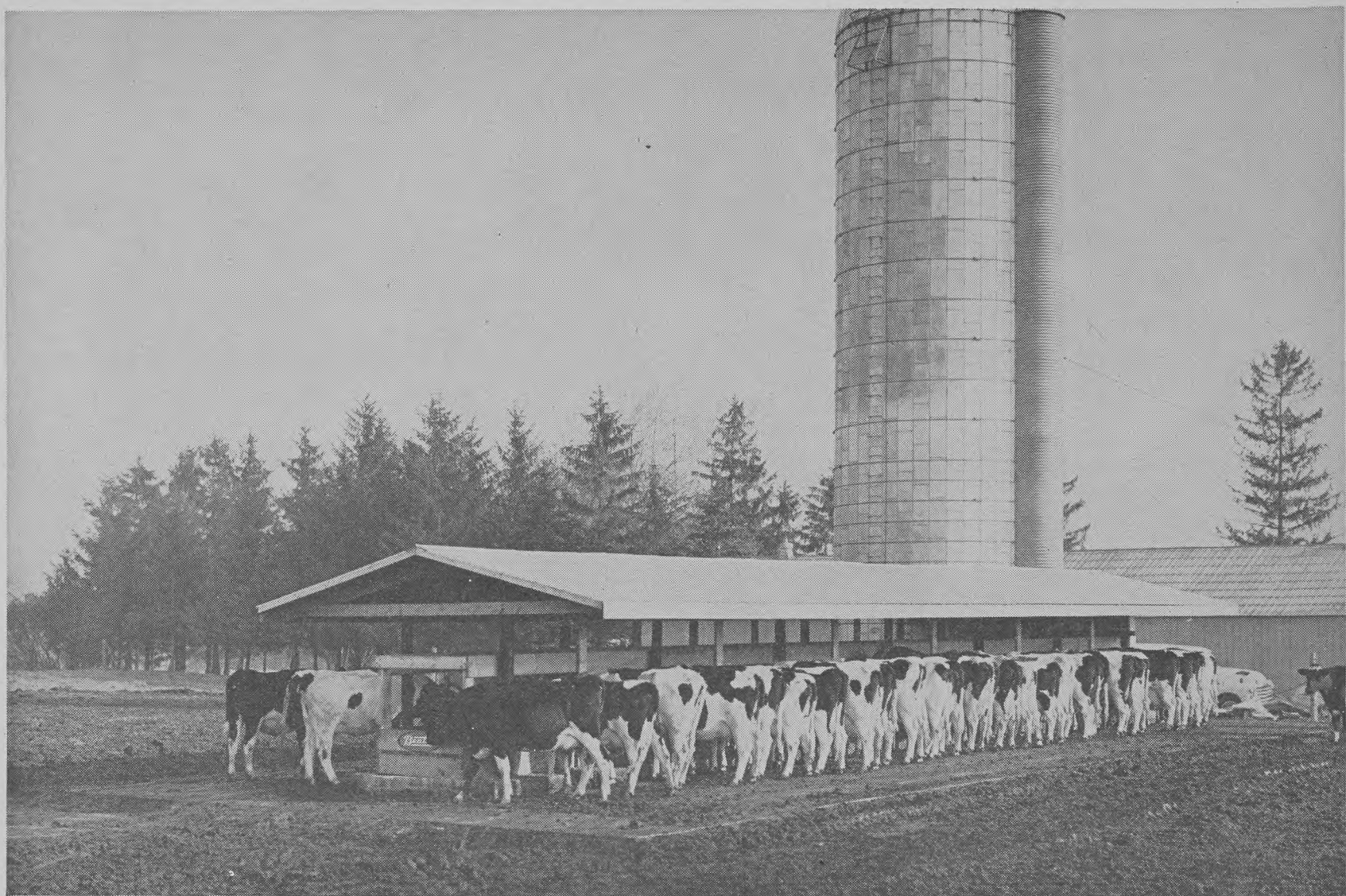
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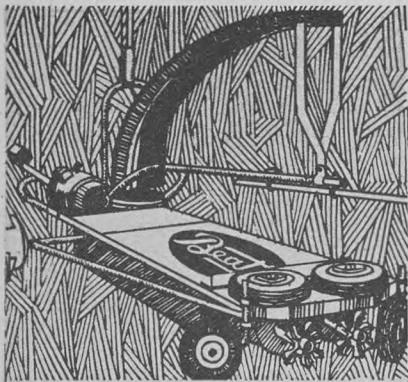
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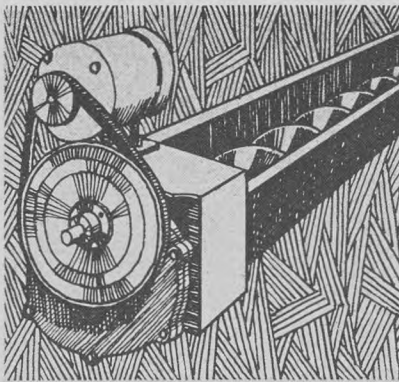
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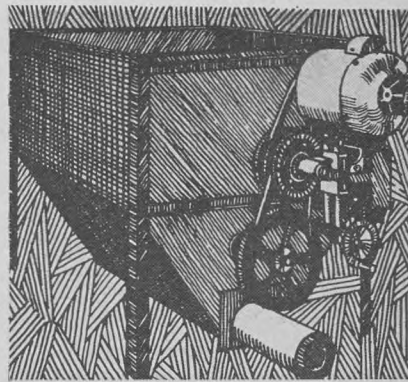
Dual auger silo unloader is built with 9" heavy duty augers for fast delivery. It feeds 50 head in 5 minutes. Special shearing action of the auger chops loose even the hardest frozen silage and keeps your silo walls clean.



3-way bunk feeder can deliver different rations to each side of the bunk or can be used as a conveyor to another feedlot. It's built 25% heavier to move every kind of feed efficiently in all kinds of weather.

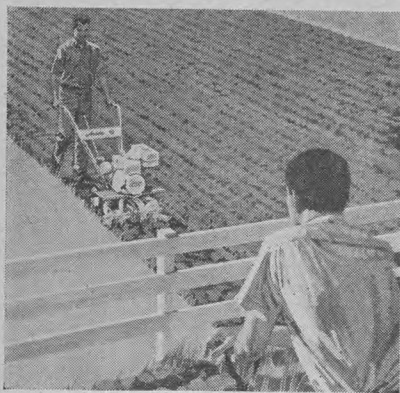


Silage and feed conveyor has big 9" auger to move silage from storage to feed bunk quickly and easily. By using flexible connectors, conveyor may be joined to bunk feeder auger and save the cost of an extra motor.



Precise Beatty feed meter accurately measures feed ingredients for balanced rations. You can feed at any rate you choose from 2 lbs. to 220 lbs. per minute. A protein meter is also available for controlled addition of supplements.

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One man's garden; another man's envy

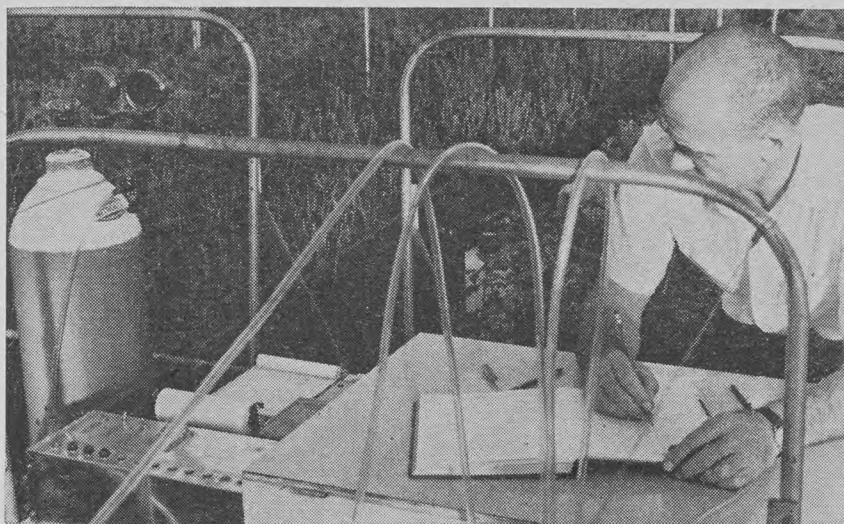
We're willing to bet that nobody can tell you that preparing a seedbed and cultivating a garden by hand is fun. It's *work*—no question about it. If you've been watching others tackle these jobs the easier way, then put down the shovel and see an eye-opening demonstration of an ARIENS JET tiller. An ARIENS JET tills up to 5,000 square feet an hour—all with fingertip controls—forward and reverse. And nobody but nobody makes a more rugged, more dependable tiller drive gear case. Start enjoying a bigger, healthier, more productive garden. Your ARIENS Dealer can put an end to envy.

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Added CO₂ boosts production. Here Dr. John Wiebe, Vineland horticulture experiment station, uses infrared gas analyzer to determine best concentration

Carbon Dioxide . . .

Friend in the Greenhouse

EVERYTHING that lives, or anything that has ever been part of a living thing, is made up of long chains of carbon atoms. For example, the corn flakes, the milk, the sugar you eat at breakfast are all different combinations of carbon with other elements. So is the wood of the table, the plastic of your butter dish, and the natural gas that heats your coffee.

The second most important element in organic material is hydrogen. In fact, most organic materials can be listed as "hydrocarbons."

How do these two elements get into our food, fuel, furniture, and fibers? Oddly enough, the carbon comes from carbon dioxide (CO₂) in the air, and the hydrogen from the water around us.

Whenever a green plant is exposed to light, it gets to work combining carbon dioxide from air with hydrogen from water to form simple sugars. These simple sugars are then changed by the plant to leaf tissue, wood, starch or oil. Animals or humans eat these plants and change the sugar, starch and oil to their own uses.

The basic process of combining carbon dioxide and water to form sugar is called "photosynthesis." This big term simply means light (photo) assembly (synthesis), in other words, putting together under the influence of light. Since we depend so directly on organic material for food, clothing and heat, the process of photosynthesis is of great importance to us.

For many years scientists have known about this process and have measured it as best they could. Recently a new research tool has been made available. This new piece of equipment, known as an infrared gas analyzer, allows very rapid, accurate measurement of the photosynthetic process. Where once it took him 1 to 2 hours to analyze

an air sample, this can now be done in less than 2 minutes.

GREENHOUSE farmers have one marked advantage over other farmers. They can increase the concentration of carbon dioxide in the air in a greenhouse and so increase the efficiency of photosynthesis. Theoretically, it should be possible to much more than double yields of greenhouse crops by adding carbon dioxide. This level of increase has been achieved in a few experiments but often the increases have been in the range of 10 to 25 per cent. Now researchers are trying to find out how to best take advantage of increased carbon dioxide levels to get consistently large yield increases.

Eventually we may even add extra carbon dioxide to the air around field crops. Certainly this is not practical at present. However, when you think that normal air contains only 0.03 per cent carbon dioxide and plants can profitably use at least 3 to 4 times that concentration, this seems to be one of our modern agricultural frontiers.

In greenhouses, carbon dioxide can be added in 3 ways: (1) by bringing in rotting organic material like manure; (2) by burning such organic fuels as propane or natural gas; (3) by piping in purified carbon dioxide from bottles. All three work.

Manure or other mulch material rots and releases carbon dioxide at an uncontrolled rate. Therefore, there are times, particularly at night, when carbon dioxide is wasted. Burning a gas is very successful but there is always danger of impurities escaping into the greenhouse and damaging the plants. Bottled carbon dioxide is safe and easily controlled. However, it is expensive. We still don't know how best to add carbon dioxide but there is no doubt that this is one of our next steps in increasing plant production. — John Wiebe.

Horticulture

Peonies Will Beautify Your Garden

H. T. ALLEN, horticulturist at the Lacombe, Alta. experimental farm, has only praise for peonies. In his experience they are beautiful, hardy and do well in a variety of soils so long as they get good drainage. He recommends planting new stock during the last half of September.

Here are his planting directions: Prepare the soil well before planting. Plant root divisions so the buds are covered with 2 inches of soil. In heavier soils, improve the drainage by digging a hole 2 or 3 feet wide and filling it with lighter soil. This will also give the plant more room for rooting.

He also points out that peonies respond well to bonemeal but rich organic fertilizers should not be allowed into contact with roots or crown.

Among the early blooming small plant types that have done well at Lacombe is John Harvard. From the Japanese varieties Mr. Allen suggests Ama - No - Sode, Jappensha - Ikhu, Krinkled White, Tokio and Mai Fleuri.

Peonies may become afflicted with Botrytis blight, Mr. Allen says. Afflicted plants develop a brownish rot on the lower part of stems and then irregular brownish areas on the leaves. Flower buds may fail to open and later turn hard and brown. To control Botrytis blight, remove and destroy infected stems. Keep the soil around the base of the plant well cultivated and free from debris. In spring, when plants are about 1 foot high, spray with a fungicide such as Bordeaux mixture, Captan or Zineb.

Hardy Ornamental Crabapple Selections

TWO NEW ORNAMENTAL crabapple varieties will be available to prairie gardeners this spring. The new varieties — Garry and Selkirk — were developed by the CDA's experimental farm at Morden, Man. Garry and Selkirk belong to the rosybloom group of ornamental crabapples which are distinguished by reddish flowers and leaves. Under test at Morden for 25 years and more recently at other prairie testing stations, both have proven their suitability and hardiness.

According to ornamentals specialist W. A. Cumming, Garry grows 20 to 25 feet high with slender arching branches. Its leaves are bronzed in spring and fall, medium green with a bronze cast in summer. Deep maroon flower buds open to medium-sized flowers of old rose that fade to a clear pink. Bright red rounded half-inch fruits follow profuse bloom. These fruits remain firm and colorful well into winter.

Selkirk grows 25 to 30 feet high and has a rounded outline. Its large leaves are first reddish and later turn to dark green with a bronze

cast. Bright purplish red flower buds open to flat-faced rose-colored flowers. Large blooms are mostly clustered at the ends of branches and give this variety a distinctive effect.

The three-quarter inch, oval fruits turn bright scarlet red in early August and remain colorful until severe frost. Then they soften, turn light brown and finally drop in late November. V

Promising Fruit Varieties

NEW FRUIT VARIETIES which show promise at England's John Innes Institute include a new strawberry named Merton Herald and two new apples, one called Merton Charm, the other as yet unnamed.

The new strawberry, Merton Herald, a cross between Tennessee Beauty and Royal Sovereign, has been on trial since 1960. A well-flavored early variety, it has fairly large conical fruit, bright orange-red in color. It shows slight susceptibility to mildew, none to verticillium wilt and does not suffer unduly from drought. Fruit picks easily and travels well. Virus-free supplies may be available for multiplication within a year.

The Merton Charm apple, a cross between McIntosh Red and Cox's Orange Pippin, is reported to have a first-class flavor. The unnamed variety, another Cox's Orange Pippin cross, is described as one of the most promising of the new varieties. It ripens in October, is brightly colored, of good size and shape and of very good flavor. V

Develop New Potato Variety

A NEW POTATO variety named Chinook will be available to Alberta potato growers by 1967, according to Dr. W. E. Torfason, of the Lethbridge, Alta., research station. A highly scab-resistant, mid-season variety, Chinook is well suited to southern Alberta's irrigated area. While the new variety has cooking and processing qualities comparable to those of Netted Gem, it gives a better yield.

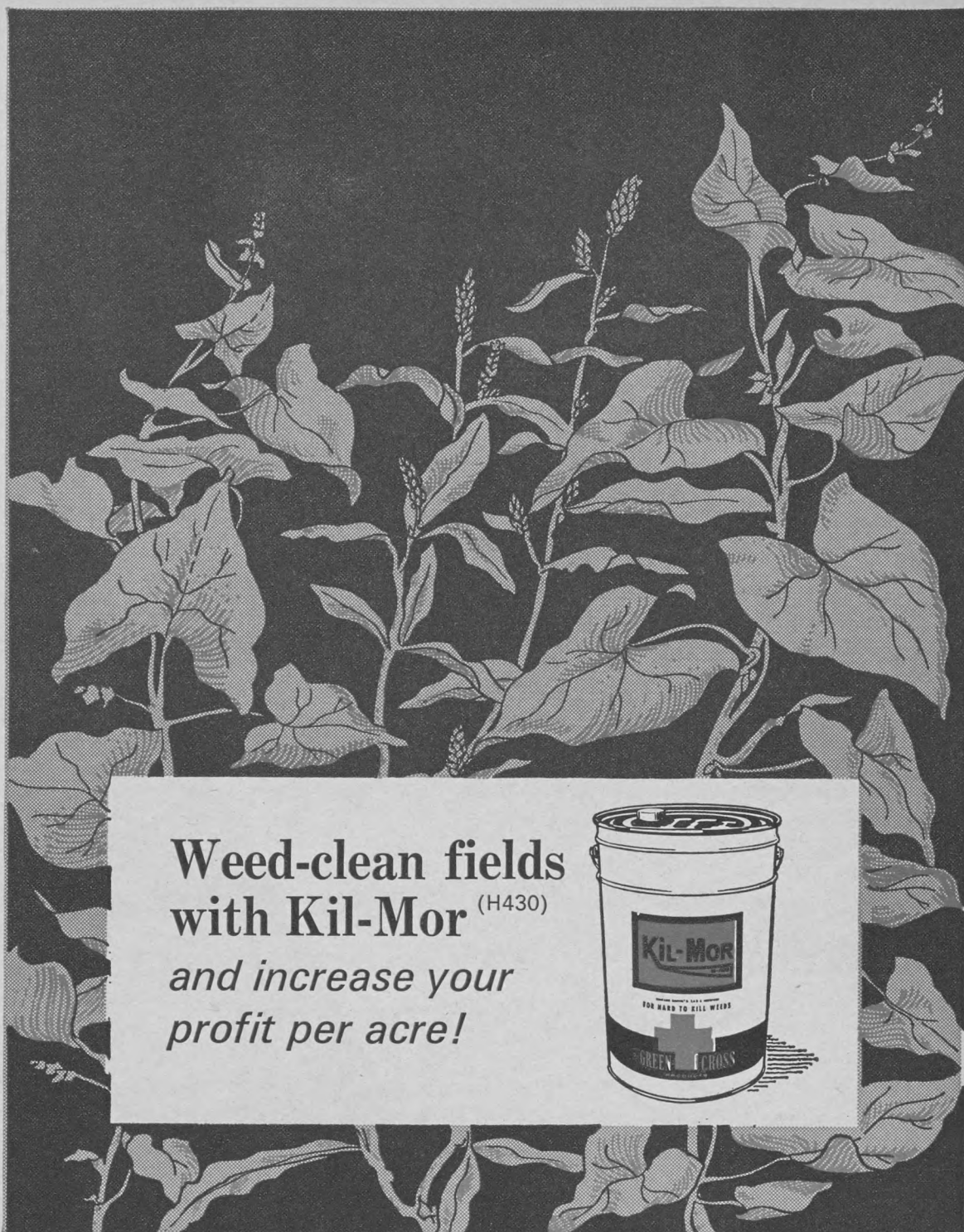
Chinook was licensed last November. Elite seed will be multiplied at the Lethbridge station this summer and next year, foundation seed growers will increase stock for general distribution in 1967.

Until Chinook seed is available, Dr. Torfason recommends Irish Cobbler as a mid-season variety. He also suggests that growers use foundation seed for healthier plants and higher yields. V


Certified Raspberries Due

FIRST PLANTS from Ontario's raspberry plant certification program will be available this fall according to officials of the Ontario Department of Agriculture. These plants, now being propagated by qualified growers, are expected to give higher yields and lengthen the productive life of raspberry plantings. V

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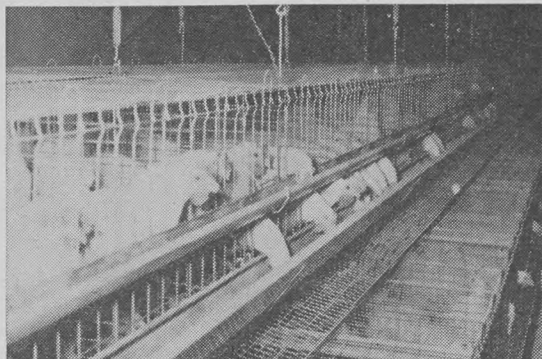
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Calcium for Laying Hens



Caged birds have no other source of calcium than the laying ration

[Guide photo]

CHECK THE RATION before you give hens extra calcium. A major problem in producing high-quality eggs is shell quality. The strength of the egg shell is an important factor, particularly in relation to handling and transportation of eggs. Low quality egg shells and cracked eggs cost egg producers a lot of money. Many are attempting to correct the problem by adding calcium to laying diets. D. G. Luckham, poultry specialist at the Western Ontario Agri-

cultural School, Ridgetown, Ont., says this may aggravate the problem.

National Research Council has reported the calcium requirement of growing pullets to be 1 per cent of the ration while that of the laying hen is 2.75 per cent of the ration. Most feed manufacturers follow these recommendations in formulating laying rations.

If all of the supplementary calcium is incorporated in a mixed

feed, you should not feed extra calcium. If the feed contains less than the required amount you should provide a calcium supplement free choice. Check the feed manufacturer's directions.

There is some disagreement among research workers as to the best method of providing sufficient calcium. It is probably easier and more efficient to provide cage birds with a feed mix containing sufficient calcium for their needs.

This method may also be best for floor layers. There is evidence that birds which have been severely de-beaked do not eat grit. They probably would not eat oyster shell or limestone. Also, there is evidence that a hen is not a good judge of her own needs and under certain conditions she will eat too much calcium which lowers egg production or increases mortality. Too much dietary calcium also causes rough egg shells.

Calcium must be supplied in the growing ration for normal growth and bone formation. Some ingested calcium is retained by the body and any excess is excreted. Recently, excessive calcium in the growing ration has been associated with kidney damage. Feeding a laying ration while the bird is growing may not be a good idea. The added stress of a very high calcium laying ration on the kidneys may cause an increase in early mortality.

Insufficient calcium in the laying ration causes hens to withdraw body calcium to maintain egg production. Once the body calcium is depleted, egg production will go down and eventually stop.

It has been suggested that the calcium requirement of hens is about 3.5 per cent of the ration until peak egg production is reached. After this, the calcium may be reduced to 3 per cent for satisfactory results.

Adding a calcium supplement, either in the feed or free choice, during hot weather or near the end of the egg production period, may result in some improvement in egg shell quality. Adding large amounts of calcium may improve shell strength and at the same time decrease rate of production. ✓

Glass Poultry Grit

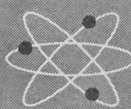
A JAPANESE inventor feeds chicks small glass beads, which he says are greatly superior to the conventional grits. Poultry do not have teeth but the equivalent of chewing is performed by rough particles in the gizzard.

The patentee, Kenso Kusaka of Kamogun, encases 5 or 10 beads in a capsule. A chick is held in the hand, its bill is forced open and the capsule is inserted. The capsule dissolves in the craw and the beads collect in the gizzard, or muscular stomach. They are said to last at least 4 months. ✓



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Farm



J. R. Smith

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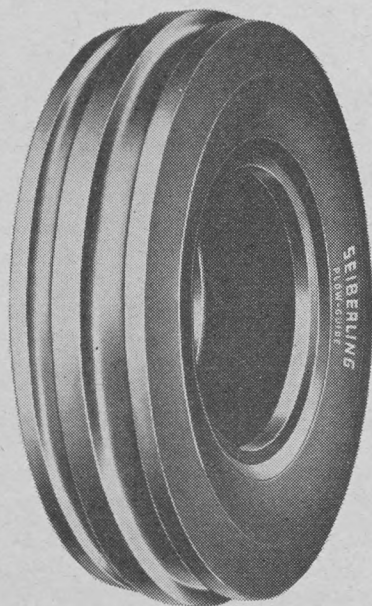
The Well-Electrified Sign is awarded to progressive farmers who have modernized their farms to a standard of electrical efficiency established by The Canadian Electrical Association. Your local electric utility representative will be glad to give you further details.

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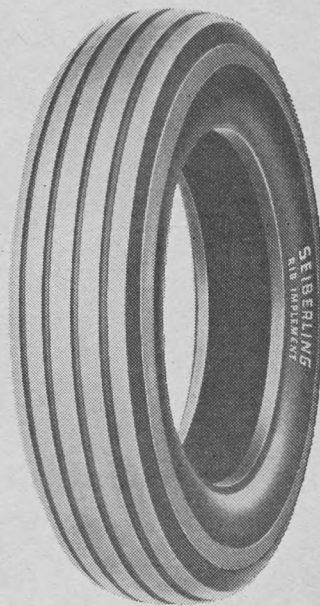
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New Virus Threat to Corn

Maize dwarf mosaic is spreading through the U.S. but has not reached Canada yet



[Wooster Experiment Station photos]

Where maize dwarf mosaic strikes, the corn crop can become a total loss

MAIZE DWARF MOSAIC is a recently named virus disease which has struck parts of the states of Arkansas, California, Indiana, Illinois, Missouri and Virginia. In 1962 it was identified in Ohio; the following year it hit 10,000 acres in that state and last year the loss was estimated at 5 million bushels of corn.

Where maize dwarf mosaic has appeared, damage to the corn crop has ranged as high as 100 per cent. Originally there was some confusion between this newly defined disease and the older established corn stunt, known to occur in the southern United States. The effects of maize dwarf mosaic are sufficiently obvious that it is extremely unlikely that the virus has entered any corn growing area unnoticed. On the bright side, the disease has not been reported in Canada or in the northern corn states of Nebraska, Iowa or Minnesota.

The time of infection has a direct bearing on the severity of the disease. Last year the symptoms were noticed in mid-June in Ohio, when the corn was about a foot high. The disease spread rapidly and reached epidemic proportions by early July. Severely stunted plants which were infected at an early age, had either small ears with poor grain set, or no grain at all by harvest time.

The symptoms in young corn appear mostly as a mosaic of light and dark areas at the base of the leaves. This sometimes causes a striping effect which gives way to a yellow hue over most of the leaf. Still later, shades of red develop near the sides and tips or as vivid streaks within the blade of the leaf.

Deep red colors may be apparent by August.

Dr. Lansing Williams, of the experiment station at Wooster, Ohio, considers that corn which has been weakened by the virus becomes more susceptible to crown rot, stalk and root rot.

Johnsongrass, which is not a Canadian, has been identified as a host in which the virus spends the winter. "Later in the season," says Dr. Williams, "foxtail and, to a lesser extent, other annual weed grasses contain the virus. These plants are not important in overwintering the virus, but they increase the build-up that subsequently spreads to corn."

The disease can be spread mechanically; in the corn fields the corn leaf aphid and other insects spread the virus. Insects in Canada could spread the disease but they would not necessarily be the same species prevalent in the U.S.

The development of resistant varieties seems to offer the best and most lasting defense against the spread of maize dwarf mosaic. Most current varieties are probably susceptible, but some already are known to have tolerance.

What are the implications of all this for Canadian corn growers? Dr. Ed Gamble, OAC corn breeding specialist, says, "There is absolutely no need to hit the panic button. However, we should be fully aware of what is happening in the U.S. This newly identified disease is just one more good reason for periodically inspecting the corn crop during the growing season. Good husbandry, which keeps grassy weeds to a minimum, reduces the hazards." Gamble

To hasten the testing of varieties for equidistant corn planting, Dr. Ed Gamble of OAC grows a winter crop in Florida. If necessary, breeding for maize dwarf mosaic tolerance could be speeded up by growing three crops annually



expects to be able to challenge some of our common corn hybrids in the U.S. under field conditions this year.

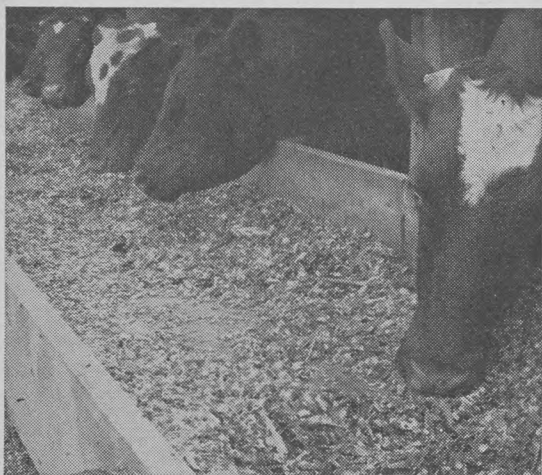
Another aspect of Dr. Gamble's work in corn breeding is entirely unrelated to maize corn mosaic but the technique used could provide the key to speeding up production of resistant varieties. Gamble is engaged in a continuing three-pronged corn breeding program. It is aimed at finding the ideal corn for equidistant planting. Selection is being made for early flowering, so that the

corn makes maximum use of the long hot summer days. The third target is to build cold-tolerant varieties which will permit more stable corn growth in May and June.

To speed up the work Gamble grows a crop in Florida in the winter. He says, "If the maize dwarf mosaic problem became an impending threat we could speed up our breeding of tolerant strains in this same way. We can even extend this to three crops in any 12-month period."—P.L. ✓

The Best Feed— High Energy Corn Silage

The way to get high energy corn silage — grow high energy corn



[Guide photo]

Steers can be fed to choice finish on high-energy corn silage with some added protein supplement

IT TAKES 4 LB. of shelled corn, properly supplemented, to produce 1 lb. of pork but a pig cannot make efficient use of the whole corn plant. A steer, on the other hand, uses 8 lb. of shelled corn to produce a pound of beef but it can efficiently digest all of the corn plant. If you are in the cattle business, you can't use only the shelled grain portion of your corn crop and still compete with your hog-raising neighbor.

Corn silage with proper protein supplement will produce more beef per acre than any other feeding system. But ordinary corn silage contains only about 70 per cent Total Digestible Nutrients on a dry-matter basis, only enough to produce good grade beef. To produce choice grade beef, the ration should contain 80 per cent T.D.N.

Shelled corn contains 94 per cent T.D.N. on a dry-matter basis. An 80 per cent T.D.N. ration can be obtained by combining 1 ton of ordinary corn silage with 7½ bu. of shelled corn. This can be done by harvesting 58 per cent of the corn crop as shelled corn and 42 per cent as whole plant silage. You have to use two lines of harvesting machinery and leave stalks in the field that could have produced more beef per acre if they were used. This system also means two separate storages, increased storage loss and more labor for feeding.

High T.D.N. silage can be made by the "center-cut" or "butt" method where only part of the corn stalk is harvested thus raising the proportion of ear to stalk. A variation of this is "alternate-row" silage. The whole plant of one row is harvested and only the ears on the next row.

Machinery costs are high and some of the plant material is not harvested.

Corn Program

J. R. Gallin, of the Soils and Crops Branch, ODA, says that a better method of producing high T.D.N. corn silage is to grow it, that is, grow corn with a high proportion of grain to stalk. This is how:

1. Select an early maturing, high grain hybrid.
2. Plant early.
3. Harvest as whole plant silage at maturity.

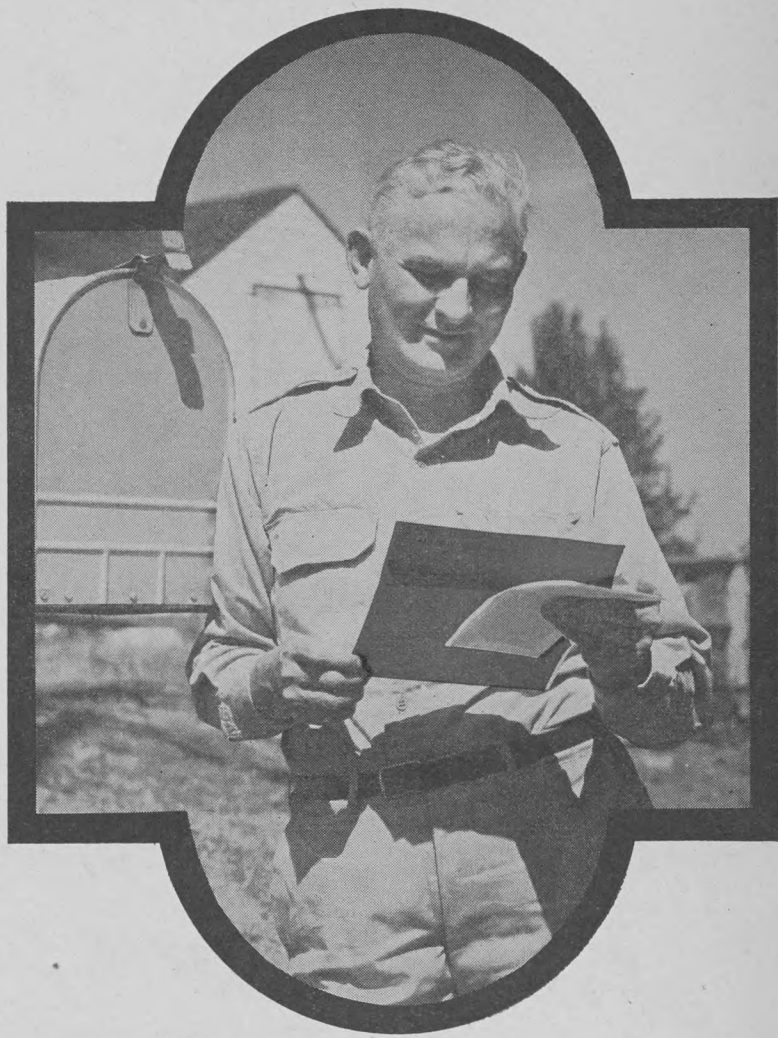
Selecting an early maturing hybrid removes the risk of the corn freezing before it has matured.

Early planting produces a shorter, smaller plant with much greater proportion of grain to stalk. Early planted corn may not look so good nor grow as tall but it produces higher yields of total dry matter and more grain than late planted corn, according to Howard Henry of the Soils and Crops Branch, Ontario Department of Agriculture. Farm trials carried out during 1963 and 1964 by the Ontario Soil and Crop Improvement Association compared corn planted early, May 3-14; medium, May 15-28 and late, May 29-June 14.

Early planted corn yielded 15.7 tons of silage containing 5.5 tons of dry matter, medium yielded 18.3 tons of silage containing 5.4 tons of dry matter and late yielded, 20.4 tons of silage containing 5.2 tons of dry matter. The grain corn harvested was 115.1 bu., 98.7 bu., and 77.5 bu.

Silage from the early plantings was 65 per cent water, medium 70

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SOILS AND CROPS

per cent and late 75 per cent. The extra water is not needed to preserve the silage, adds nothing to the feed value and increases the cost of harvesting, storing and feeding a ton of dry matter.

Early plantings also produced grain corn with a higher dry matter content: early 47 per cent dry matter, medium 41 per cent and late 33 per cent. Since shelled corn has more feed value than stalks and leaves, early planted silage, with its high grain content, is the best feed.

Seed Treatment

Corn should be sown as early as weather and soil conditions will permit. Modern, cold tolerant hybrids will grow in the cool weather of early May. In the extreme southwestern sections of Ontario, late April plantings may be practical. Seed rot and insect damage can be overcome by chemical seed treatments. Commercial seed corn in Ontario is treated with a fungicide to control seed rotting organisms. To protect corn against seed maggots and wireworms, all seed should also be treated with an insecticide. R. H. Brown, horticulture specialist, Western Ontario Agricultural School,

says that in 1965 most seed corn will be accompanied by a package of insecticide which should be applied to the seed just prior to seeding. The insecticide will prevent damage from soil insects like seed corn maggot and wireworm. The reason corn seed is not treated with insecticides until shortly before seeding is that treating seed more than 3 months before seeding will reduce germination.

An insecticide alone is frequently more injurious to seed than when it is applied with a fungicide. However, since the companies have already applied the fungicide, no further fungicide need be applied.

Diseases affecting germinating seeds and seedlings are more harmful when the seed is injured by insects. Damping-off organisms are the most common. The fungicides applied by the seed company are therefore of utmost importance to good emergence.

A few cents' worth of protection in the form of insecticides supplied by the seed company with each bushel of seed corn, should be well worth many times its weight in bushels of corn harvested by the grower.

Henry says that corn hybrids should be chosen with great care. If corn matures too late and is frozen in the fall before reaching maturity, dry matter yield will be lost. Corn does not reach maturity until the grain moisture is down to 35 per cent. If growth is stopped by frost at 60 per cent moisture (milk stage) only half of the potential dry matter yield will be obtained. A 15 per cent loss in yield can be expected even if the grain moisture is down to 45 per cent when the killing frost hits. Early hybrids are often ready for harvest before bad weather becomes a problem.

Harvesting near maturity is important if you are to get top yields. Harvesting immature corn causes loss of feed or dry matter, especially in the high energy grain portion of the plant. Late harvesting causes storage losses, because over-mature corn is too dry to ensile.

All information should be used in choosing suitable hybrids. Study the characteristics of each hybrid and determine how well it suits a certain area or farm. Maturity, stalk strength, ear height, ear size, ease of picking and disease and insect resistance are all important, but most emphasis should be placed on maturity and stalk strength in making the final choice.

In Ontario the standard guide used in choosing hybrids is the annual report of the "Hybrid Corn Performance Trials" conducted by the Ontario Corn Committee. This report is available from county offices of the Ontario Department of Agriculture. It provides detailed yield, maturity and stalk strength data for Ontario to use in choosing hybrids of suitable maturity for individual farms.

Fertilizer

All the common nitrogen fertilizers are equally effective for corn if they are properly applied. Price is usually the main factor in making a choice. T. E. Bates of the Department of Soil Science, OAC, says you should compare them on the basis of the price per pound of nitrogen.

$$\text{Price of nitrogen per pound} = \frac{\text{price per ton}}{\% \text{ N} \times 20}$$

Each nitrogen fertilizer has characteristics which affect its use.

Anhydrous ammonia, 82 per cent N, and aqua ammonia, 20 per cent N, may have a price advantage over other forms. However, application costs are greater as they must be placed in the soil to prevent evaporation losses. Anhydrous ammonia should be placed 6 in. deep in the soil and aqua ammonia 3 in. deep.

Ammonium nitrate, 33 per cent N, is the only common source other than mixed fertilizer, that should be applied with the corn planter. When placed 2 in. to the side and below the seed, rate should not exceed 60 lb. of nitrogen per acre. For pre-plant application on most soils or for side-dressing it is equal to other sources.

Urea, 45 per cent N, is satisfactory for pre-planting or side-dress application. Evaporation losses may occur if it is applied on heavy crop residues.

Nitrogen solutions, except aqua ammonia, are usually made up of urea and ammonium nitrate and may be used wherever the dry materials are satisfactory. Solutions should not be sprayed on growing crops due to the danger of burning the leaves. They can be put on satisfactorily with drip or jet nozzles. ✓

Fertilizing Cereal Grains

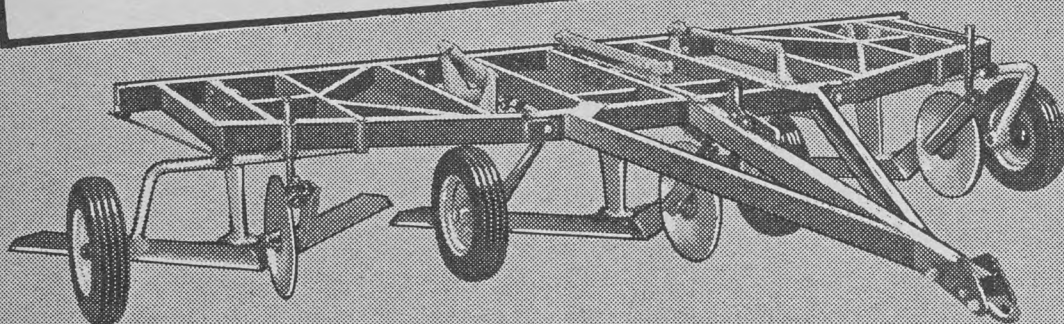
THE BEST PLACE to put fertilizer for cereal grains is directly with the seed. This was the most effective in field and greenhouse studies conducted by the Dept. of Soil Science, OAC, compared to putting it beside or above the seed. It was also better than broadcasting and discing in the fertilizer. If you do not have a fertilizer attachment, it is doubtful if you can justify the cost of a new drill just to achieve optimum placement. Only when you are growing a large acreage of cereal grains, particularly wheat or barley, is this likely to be worthwhile.

There are two other methods. You can use liquid fertilizer or plow down broadcasted dry fertilizer.

Liquid fertilizer applied at the same rate and in the same position (Please turn to page 54)

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1964 Results of Cominco Demonstration Farms Announced

ALBERTA FORT MACLEOD Tom Blunden

Elephant Brand A.P. 11-48-0 applied at the rate of 100 lbs. per acre on a four-year-old stand of alfalfa gave an extra net profit of \$5.00 per acre. Yield increased by 800 lbs. per acre.

Barley was seeded with 100 lbs. of Elephant Brand A.N.P. 23-23-0 per acre on land that had been cropped to either barley or wheat for the five preceding years. Yield was increased 12.6 bus. for an extra net profit of \$5.68 per acre.

Summerfallow wheat fertilized with 50 lbs. of Elephant Brand A.P. 11-48-0 at seeding time produced 6.8 more bus. per acre for an extra net profit of \$7.00 per acre after deducting the fertilizer cost.

CARSTAIRS Bob Thew

Elephant Brand fertilizer applied with Wolfe barley on stubble land at 100 lbs. per acre gave an extra net profit of \$16.14 per acre. Yield increased by 25 bus. per acre.

200 lbs. of Elephant Brand A.N.P. 23-23-0 per acre broadcast on an alfalfa grass stand increased yield by 1.8 tons for an extra net profit of \$27.00 per acre.

Parkland barley was seeded on summerfallow with 50 lbs. of Elephant Brand A.P. 11-48-0 per acre. The fertilizer produced 14.1 more bus. per acre for an extra net profit of \$8.70 per acre after paying for the fertilizer.

LACOMBE Bob Harrington

Three demonstrations were placed on stubble land seeded to barley on this Demonstration Farm.

In the first demonstration, 150 lbs. per acre of Elephant Brand A.N. 33.5-0-0 were broadcast before seeding and 50 lbs. per acre of Elephant Brand A.P. 11-48-0 was applied with the seed. Extra profit due to fertilizer amounted to \$8.75 per acre. Yield increased by 20.4 bus. per acre.

In the second demonstration, 150 lbs. of Elephant Brand A.N.P. 23-23-0 per acre again gave an increase of 20.4 bus. for an extra \$9.86 net profit per acre.

The third demonstration was an application of Elephant Brand A.N.P. 27-14-0 at 150 lbs. per acre. Yield was increased by 19.6 bus. for an extra net profit of \$9.59 per acre after paying for the fertilizer.

BONNYVILLE Donat Dumont

Two demonstrations were placed on a three-year-old stand of brome alfalfa. Elephant Brand A.S. 21-0-0 was applied at rates of 100 and 200 lbs. per acre. In the first case, yield increased 1,000 lbs. for an extra net profit of \$7.30 per acre. In the second case, yield increased by 800 lbs. per acre for an extra profit of \$2.60 per acre after paying for the fertilizer.

An application of 160 lbs. of Elephant Brand A.P. 16-20-0 per acre on the same field produced a yield increase of 600 lbs. per acre. Although this resulted in a gain of \$6.00 per acre, it represented a net loss of \$0.04 per acre after paying for the fertilizer.

CAMROSE Dennis Mohler

300 lbs. of Elephant Brand A.P. 16-20-0 per acre was broadcast in the fall on an old stand of brome hay. Yield increased .91 tons per acre and extra net profit amounted to \$11.89 per acre after paying for the fertilizer.

Summerfallow wheat fertilized with 50 lbs. per acre of Elephant Brand A.P. 11-48-0 produced an additional 4.6 bus. for an increased net profit per acre of \$2.99 after deducting the fertilizer cost.

50 lbs. per acre of Elephant Brand A.P. 11-48-0 applied with the seed barley raised yield by 10.3 bus. for an extra net profit of \$0.46 per acre after paying for the fertilizer.

HIGH PRAIRIE Dewinter Brothers

Flax seeded on stubble land received an application of 100 lbs. per acre of Elephant Brand Urea 45-0-0 prior to seeding and this resulted in an extra net profit of \$22.28 per acre after paying for the fertilizer. Yield increased by 8.9 bus. per acre.

Flax seeded on summerfallow received an application of 40 lbs. of Elephant Brand A.P. 11-48-0 per acre with the seed and produced .8 extra bus. per acre for an increased profit of \$0.24 per acre after paying for the fertilizer.

Barley seeded on summerfallow was fertilized with 60 lbs. of Elephant Brand A.P. 11-48-0 per acre and produced an increase of 8.1 bus. per acre for an extra net profit of \$3.12 per acre after paying for the fertilizer.

Barley seeded on stubble land fertilized with Elephant Brand A.N.P. 27-14-0 produced an increased yield of 21.5 bus. per acre for an extra net profit of \$12.44 per acre after deducting the fertilizer cost.

SASKATCHEWAN HODGEVILLE Mike Dayne

Wheat seeded on stubble land with 80 lbs. per acre of Elephant Brand A.P. 16-20-0 showed an increase of 3 bus. per acre for an extra net profit of \$2.18 per acre after paying for the fertilizer.

Oats seeded on summerfallow land with 80 lbs. per acre of Elephant Brand A.P. 11-48-0 yielded 10.2 more bus. per acre for an increased net profit per acre of \$1.10.

As most of the oat crop was cut green for feed, the extra production of three-quarters of a ton of dry matter on the fertilized test strip returned a profit in feed of \$8.50 per acre after the fertilizer was paid for.

Much of the land on this farm has been severely eroded in the past and Mike estimated that fertilizer doubled yields on the highly-eroded areas.

RABBIT LAKE Stan Maloney

Though drought and hail knocked-out the fertilizer demonstration on stubble land, a demonstration on summerfallow wheat showed excellent results. Elephant Brand A.P. 11-48-0 applied at a rate of 40 lbs. per acre increased yield 5.9 bus. for an extra net profit of \$6.75 per acre after paying for the fertilizer.

A.N. = Ammonium Nitrate.
A.P. = Ammonium Phosphate.

A.N.P. = Ammonium Nitrate-Phosphate.
A.S. = Ammonium Sulphate.

BIGGAR John Anderson

Pembina wheat seeded on summerfallow fertilized with 40 lbs. per acre of Elephant Brand A.P. 11-48-0 gave an extra net profit of \$10.95 an acre after paying for the fertilizer. Yield increased 8.1 bus. per acre.

70 lbs. of Elephant Brand A.N.P. 27-14-0 applied to each acre of stubble land seeded with Hanchon barley increased yield by 6 bus. per acre for an extra net profit of \$1.60 per acre after paying for the fertilizer.

Stubble land seeded to Redwood flax received an application of 60 lbs. per acre of Elephant Brand A.N. 33.5-0-0 and showed an increased yield of 2.6 bus. for \$5.35 extra net profit per acre after deducting the cost of the fertilizer.

KELVINGTON Henry Dueck

Wheat seeded on summerfallow with an application of 45 lbs. per acre of Elephant Brand A.P. 11-48-0 produced an extra net profit of \$6.90 per acre after paying for the fertilizer. Yield increased 5.8 bus. per acre.

150 lbs. per acre of Elephant Brand A.N. 33.5-0-0 was applied prior to seeding barley on stubble land. At seeding time, 45 lbs. of Elephant Brand A.P. 11-48-0 was applied. Though yield increased 4 bus. per acre over the unfertilized check strip, there was a loss of \$5.33 per acre.

One acre of the same barley field received 115 lbs. per acre of Elephant Brand Urea 45-0-0 before seeding, and 45 lbs. per acre of Elephant Brand A.P. 11-48-0 with the seed. Although this resulted in a gross profit of \$4.20 per acre, it represented a net loss of \$4.53 per acre after paying for the fertilizer.

It should be noted that the lack of moisture at seeding time, and later hail damage before the crop was mature, reduced both yield and grade.

Barley seeded on summerfallow and fertilized with 45 lbs. per acre of Elephant Brand A.P. 11-48-0 produced an extra 16.4 bus. per acre for an extra net profit of \$10.74 per acre after paying for the fertilizer.

GUERNSEY Harold Biehn

Wheat seeded on summerfallow fertilized with Elephant Brand A.P. 11-48-0 gave an extra net profit of \$6.21 per acre after paying for the fertilizer. The yield on the fertilized stand was 35.3 bus. per acre—5.1 bus. per acre more than the unfertilized check strip. Stubble land was fertilized with 80 lbs. per acre of Elephant Brand A.N. 33.5-0-0 before seeding oats and 40 lbs. per acre of Elephant Brand A.P. 11-48-0 was applied with the seed. Even with extremely dry conditions

during seeding and the growing season, yields increased 1.8 bus. per acre over the unfertilized check strip. Although this resulted in an increased gross profit of \$0.90 per acre, it represented a net loss of \$2.30 after paying for the fertilizer.

A grass-alfalfa mixture that received an application of 200 lbs. of Elephant Brand A.N.P. 27-14-0 per acre in the Fall yielded an extra 430 lbs. per acre. Although this resulted in an increased gross profit of \$5.36 per acre, it represented a net loss of \$3.64 per acre after paying for the fertilizer. Though the low yield increase resulted in a net dollar loss, Harold noted that the fertilized hay was greener, leafier and of a better quality than the unfertilized feed.

MANITOBA DEEPALE Lloyd Elder

Summerfallow land seeded to barley and fertilized with 40 lbs. of Elephant Brand A.P. 11-48-0 per acre produced an extra net profit of \$7.20 per acre after paying for the fertilizer. Yield increased 11.7 bus. per acre.

Wheat seeded on first year stubble land received an application of 50 lbs. per acre of Elephant Brand A.P. 11-48-0 which gave an increase per acre of 9.1 bushels for an \$11.86 per acre increase in extra net profit after paying for the fertilizer.

GLENBORO Herman Arason

A grass-alfalfa field received a 150 lb. per acre application of Elephant Brand A.N.P. 27-14-0 which produced an extra net profit of \$4.90 per acre after paying for the fertilizer. Yield increased 1,400 lbs. per acre.

Wheat seeded on summerfallow and fertilized with 45 lbs. per acre of Elephant Brand A.P. 11-48-0 produced 6.4 more bus. per acre for an increased net profit of \$7.17 per acre after paying for the fertilizer.

Elephant Brand A.N. 33.5-0-0 broadcast at 100 lbs. per acre prior to seeding wheat on stubble land was followed by 50 lbs. per acre of Elephant Brand A.P. 11-48-0 applied with the seed. The resulting 15.4 bus. yield increase provided an extra net profit of \$16.47 per acre after paying for the fertilizer.

A comparison was made on the same field by applying 80 lbs. per acre of Elephant Brand A.N.P. 27-14-0 with the seed. An increased yield of 7.5 bus. per acre raised net profits to \$7.65 after paying for the fertilizer.

GRISWOLD John Milne

Four of the five demonstrations carried out on this farm were made to show the benefits of applying additional nitrogen fertilizer on grain fields that were to receive a basic application of 40 lbs. per acre of Elephant Brand A.P. 11-48-0 with the seed. (In these four demonstrations, the check strips included 40 lbs. per acre of A.P. 11-48-0.)

Three demonstrations were on Selkirk wheat and the extra nitrogen was applied prior to seeding. The extra nitrogen in the first demonstration was applied as Elephant Brand Urea 45-0-0 at 90 lbs. per acre on summerfallow, in the second demonstration as A.N. 33.5-0-0 at 120 lbs. per acre on heavy stubble and in the third demonstration as Urea 45-0-0 at 90 lbs. per acre on stubble. The extra net profit due to extra nitrogen was \$10.52, \$10.92 and \$18.52 per acre respectively.

The fourth demonstration on Rodney oats used 50 lbs. per acre of Elephant Brand anhydrous ammonia 82-0-0. The extra nitrogen gave an extra net profit of \$25.84 per acre.

In the fifth demonstration a six-year-old stand of brome-alfalfa received 160 lbs. per acre of Elephant Brand A.P. 16-20-0 in the fall of 1963 which gave an extra net profit of \$6.84 per acre after paying for the fertilizer.

6 Years' Results Show These AVERAGE EXTRA NET PROFITS

ON SUMMER-FALLOW

\$8.03

EXTRA NET PROFIT PER ACRE

ON STUBBLE & SOD BREAKING

\$7.79

EXTRA NET PROFIT PER ACRE

ON FORAGE

\$10.78

EXTRA NET PROFIT PER ACRE

With Recommended Rates of ELEPHANT BRAND FERTILIZER

These extra net profits are the six-year averages of farm-scale use of Elephant Brand fertilizer on 229 Demonstration Farm fields—71 on summerfallow, 100 on stubble and sod breaking and 58 on forage crops. In every case these figures represent the increased net profit per acre after deducting the cost of the fertilizer.

The results of the 1964 Demonstration

Farms, which have been included in the averages above, are shown on this page. These demonstrations were carried out by 14 farmers in Western Canada, working closely with Cominco District Supervisors. Results during the 1964 growing season averaged an increased net profit of \$8.62 per acre after paying for the Elephant Brand Fertilizer.

SOILS AND CROPS

(Continued from page 52)

is as good as dry fertilizer. A seed drill in good operating condition can be easily equipped for liquid fertilizer, costing about \$75 to \$150 for a 15-run drill, depending on the system used.

You don't have to use high-cost starter solutions. Liquid fertilizers sold by the ton will do as well.

These are applied at the same rate as dry materials. At these rates, however, you should avoid materials containing urea which may injure the germinating seed.

If a drill is equipped to handle liquids, all the fertilizer required up to a total of 100 pounds of nutrient (N + P₂O₅ + K₂O) per acre should be applied directly with the seed.

Liquid fertilizers are not always available because of the high cost of transportation. In this case, another alternative must be found.

If you cannot band the fertilizer you should broadcast it on the surface and disc it into the top three inches of the soil. Plowed-down fertilizer is placed deeper in the soil where there is more moisture and where there are more roots. Corn trials show that a plowed-down application gives more yield than a disced application and this would also be true for cereal grains. ✓

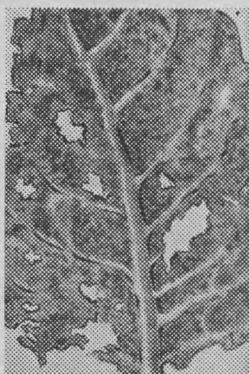
ATTENTION RAPE & MUSTARD SEED GROWERS



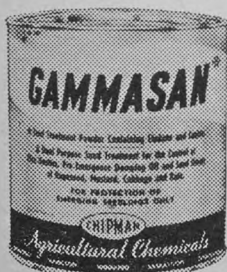
WIPE OUT THIS KILLER!

**Fight Him Effectively
Even Though
You Haven't Seen Him!**

This killer is the flea beetle — an enemy of rape and mustard seed crops. It is so small it is difficult to see—yet the damage it does (see picture at right), can ruin your entire crop! The flea beetle first attacks when seedlings are breaking through the soil. Most of the damage occurs at this stage . . . so by the time you can see leaf destruction in your plants, your yield will have already been reduced.



"GAMMASAN" seed treatment provides low-cost insurance against flea beetle attacks in the seedling stage (and against soil-borne diseases!). It can be applied simply with drum treater, cement mixer or even with a shovel for small quantities. Treated seed is white in color . . . It's easy to see — permits speedy checking of coverage. Don't take chances with your rape or mustard seed crop at the critical seedling stage. Treat early with "GAMMASAN" — another first from Chipman research.



CHIPMAN CHEMICALS LIMITED

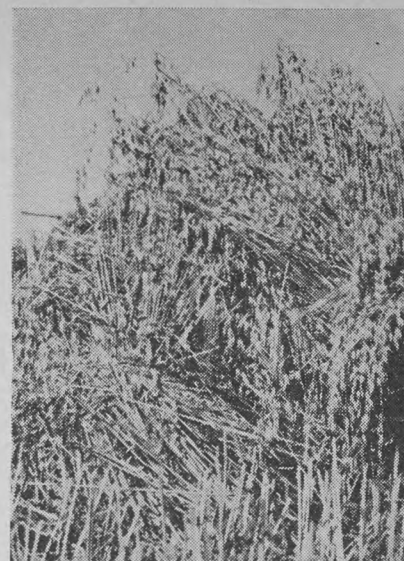
HALIFAX • MONTREAL • HAMILTON • WINNIPEG
SASKATOON • CALGARY • VANCOUVER

Good Seed Is a Bargain

HIGH QUALITY SEED can be a farmer's biggest bargain and poor seed can be his biggest cost. Many farmers sow "cheap" seed, often low in germination and frequently containing noxious weed seeds. Farm surveys show that the worst seed is either grown at home or purchased from neighbors and the best seed is that cleaned and tagged by seed companies.

High quality seed represents only 7-10 per cent of the total cost of producing a crop — yet pays off handsomely in cleaner fields and higher yields.

Drill box sample surveys show that many farmers still plant untested seed that is not cleaned or is poorly cleaned. Often this seed came directly from the farmer's grain bin or his neighbor's. Such home-grown planting seed is generally poor in quality. Many of these untested lots of seed contained weed seeds, often noxious weed seeds.



[Guide photo]
You are well paid for using quality seed when you get high crop yields

Seed experts advise farmers:

1. Plant only seed that has been properly tested and labeled to comply with Federal seed laws. Sowing untested seed is always a gamble.
2. Plant seed suited to area.
3. Purchase seed from a reputable seed dealer serving local area.
4. Purchase their seed early so that they have a good choice and will not be forced to take the last available.
5. If farmers used their own home-grown seed, they should have it cleaned by a reputable seed processor. They should also have it tested by a recognized competent seed laboratory for germination and to insure that it is free from excessive or noxious weed seed. ✓

How Good Is Your Hay?

You can see the difference if you check:

- stage of cutting
- leaf loss
- color and odor
- grass-legume ratio



[Guide photo]

If your forage is leafy, clean, bright green and fresh smelling it is certain to be of high quality

QUALITY IN HAY varies greatly, more so than in any other feed crop. Digestibility ranges from 45 per cent in late-cut material to 80 per cent in young, immature forage. Animals will eat 2-3 times more excellent forage than poor forage. Furthermore, there are wide differences in protein, mineral and vitamin content.

D. N. Mowat of the Crop Science Department, OAC, says that a great deal can be told by simply looking at the hay. The most important factor affecting nutritive value is early harvesting. Forages cut at the recommended stage, late-bud stage in alfalfa or late-boot stage in grasses, have a potential digestibility of 65 per cent. However, the same crop cut at full flower will have declined to 55 per cent or less digestibility. Di-

gestibility decreases about ½ per cent per day after late May. Palatability and protein content also decline as the forage matures.

In aftermath forages loss of nutritive value from delayed harvest is less by perhaps half as much as first-cut forages. At the late-bud stage first-growth and aftermath forages compare in quality. However, aftermaths are never as digestible as vegetative first-growth forages.

Leaf loss reduces the feeding value of hay. Legumes are particularly susceptible to such losses during harvest. Losses are greatest when the hay has been rained on, raked when dry, or baled carelessly. Leaves contain 2-3 times as much protein as stems and are generally

(Please turn to page 59)



IT'S HERE!
FROM ALLIS-CHALMERS
NEW ONE-NINETY

XT

ONE-NINETY
XT

"Wait till you see what we've done for 5-bottom farming"

ALLIS-CHALMERS

PICK YOUR POWER!
PICK YOUR FUEL!

THE ONE-NINETY

1. GASOLINE
2. DIESEL

THE ONE-NINETY XT

3. GASOLINE
4. DIESEL
5. L-P GAS

THE ONE-NINETY LINE OFFERS YOU

5 ENGINES

YOU TELL US WHICH ONE YOU WANT!

SEE!

ONE-NINETY
XT

SEE!

ONE-NINETY
XT





FOR THE FIRST TIME IN FARM TRACTOR HISTORY...

**“Right here
is the answer to
giving a man
his choice—where he
wants it most!”**

You'd expect Allis-Chalmers to be the one to take the lead with an idea like this—the idea that a farmer deserves at least as much freedom of choice when he invests in a new tractor as when he buys a car. That's why now, for the first time in farm tractor history, *one great 5-plow tractor offers you 5 engine options!*

You know that often as not a 5-bottom tractor will handle six or seven some places—and five will pull tough in others. So—guided solely by what you *want and need* for your own 5-bottom work, you may choose the powerful, responsive performance of the One-Ninety. Or, if your special conditions call for, say 15 or 20 more horses, the new power-packed XTs are for you. The choice is *yours*.

Which one of the One-Nineties do you want? No matter which you buy, you'll have the most exciting tractor to come on the farm scene in a generation. On the next page is a partial rundown of some of the across-the-board advantages...

Pick the One-Ninety you want. Any one of the five gives you things you'll find nowhere else!

Here are just a few of the exceptional good things that come with any one of the Allis-Chalmers tractors in the One-Ninety line: Start with (1) that roomy platform, a full yard in either direction. See that 12-position contour seat, (2) just one of three styles, and (3) power steering plus an adjustable steering wheel that allows the driver to sit or stand. Your console control (4) where your right hand drops on it—power director, speed control, hydraulic controls, Traction Booster, and position control levers—all in a group where you don't have to reach. Look down that low-sloped engine hood (5)

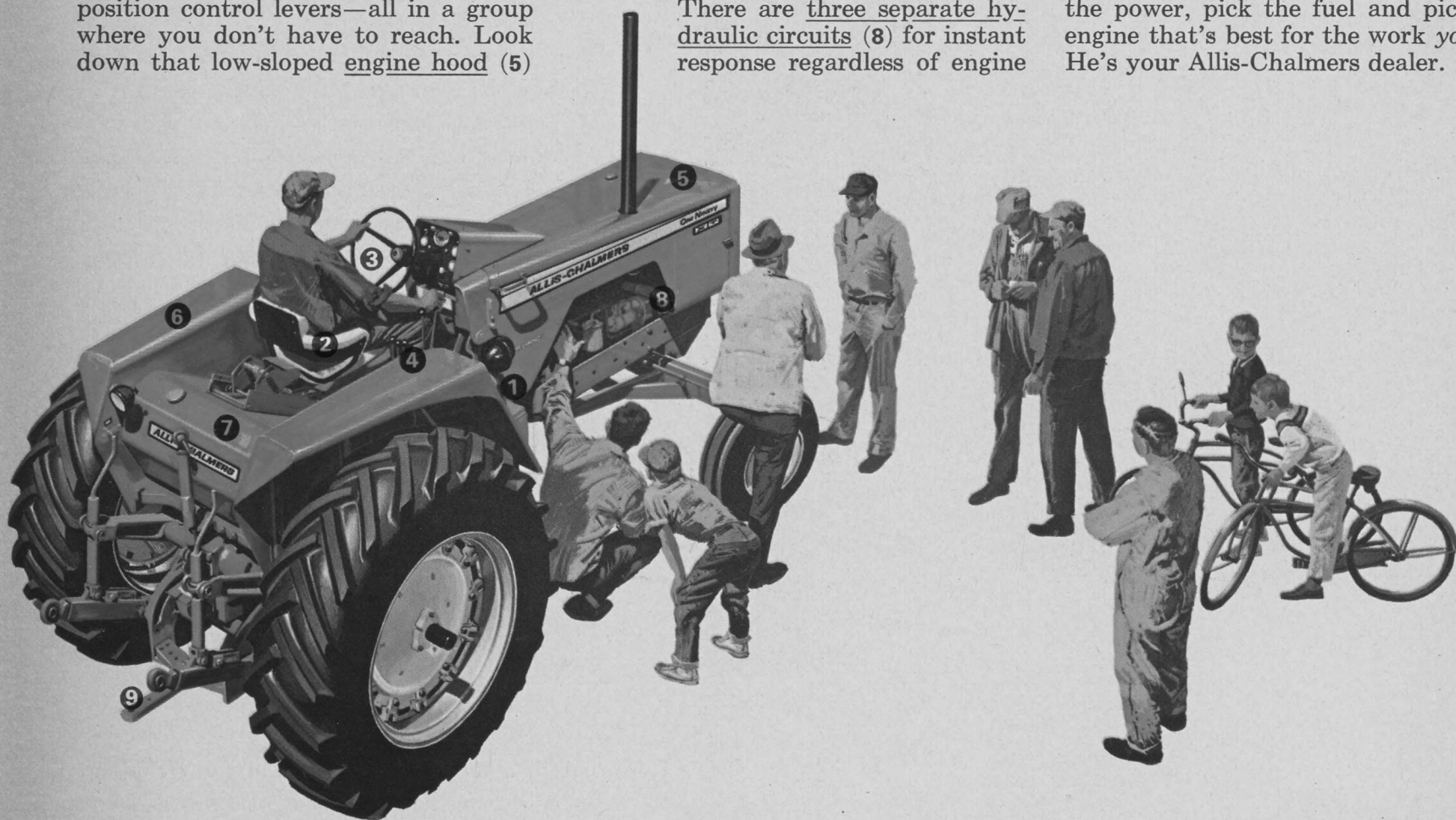
and see closer in front than you ever did before on a tractor this big. Notice the big air scoop ahead of the wheels for cleaner air. Now have a look at (6) the full-skirted fenders that protect without hiding the wheels. All four wheels are adjustable for tread width to suit the row and the crop. Turn around and see your huge, 48-gallon day-long fuel tank (7)—no delays to refuel. There are three separate hydraulic circuits (8) for instant response regardless of engine



speed. And (9) your choice of the easiest 3-point hitch you've ever seen, or Allis-Chalmers Snap-Coupler.

You've just made a fast tour of a tractor built to go!

We could go on and on—but isn't there someone not too far from you who can show you the One-Ninety and One-Ninety XT ... someone who gets just as excited talking about these goin' 5-bottom tractors as we do? Sure there is! And he's just the man who can help you pick the power, pick the fuel and pick the engine that's best for the work *you* do. He's your Allis-Chalmers dealer.



(Continued from page 54)

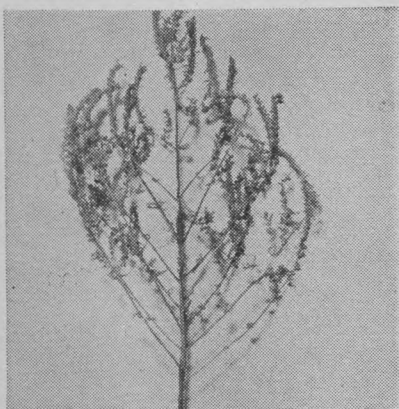
much higher in TDN and carotene content.

Color and odor are indicators of quality. For example, moldiness indicates storage at too high moisture content, while a leached appearance indicates rain damage. It should be emphasized, however, that early cut hay with moderate rain damage is still better quality than late-cut hay with no weathering.

Finally, the legume to grass ratio is an indicator of protein content. Legumes and grasses are similar in energy content when cut at the same time, but legumes contain much more protein.

Thus, by looking at his forage a farmer can pinpoint the weaknesses in his hay-making operations and decide on the steps he must take to get better quality hay. V

New Weed Poisons Legumes



[Man. Dept. Agric. photo]

Red bartsia will produce many seeds and quickly spread in forage fields

RED BARTSIA has invaded and destroyed legume and grass stands in the Gimli, Man., area and already is a serious problem in pastures there. It produces a material toxic to alfalfa and clovers.

Red bartsia grows only from seed and can be controlled by early spraying. The seed germinates late in the season and the plant is small and weak during the early summer. Vigorous growth comes about mid-July. As the plant matures the stem turns red and field infestations are easily spotted by the reddish color.

Eight ounces per acre of 2,4-D or MCPA will control red bartsia before blooming. This rate has little effect on established forages. After blooming, at least 16 ounces are required.

"Farmers may not recognize red bartsia in the inconspicuous early stages and will miss their chance for control before it seeds," says John Howden, weed specialist with the Manitoba Department of Agriculture. The weed produces a large number of small seeds that appear to last for at least 5 years in the soil. If it becomes established in a forage crop the stand will probably have to be plowed down within 2 years.

Specialists suspect that the weed, which is very small and covered with fine hairs, is moved about by people for it shows up in community hall yards and school grounds.

"If farmers will spray with 8 ounces of 2,4-D or MCPA right after they take the hay crop off they should have no more trouble," says Howden. V

only golden arrow

DOES YOUR SPRAYING AS IT SHOULD BE DONE AND SAVES

YOU MONEY, TOO !

Golden Arrow, Canada's largest sprayer manufacturer, has such a wide range of sprayers you'll find one exactly right for your size of farm and type of crop. For instance, in the Spray Master Field Sprayers, now in seven models, you can get a range of tank sizes from 166 to 420 Imperial (200-500 U.S.) gallons and boom coverage from 33 to 58 feet.

And each Golden Arrow Sprayer has so many time-saving, money-saving features. In only 90 seconds, all Spray Master models can be changed from spray to trail positions. The outrigger wheel assemblies have an exclusive locking device for spray and trail positions, to prevent shimmy. All tank lids are hinged, properly vented and sealed to prevent leakage.

Golden Arrow's high standard of quality in materials and workmanship is carefully maintained in each sprayer and is backed up by a full one year guarantee. Golden Arrow takes pride in its product . . . and in its thousands of satisfied customers.



Spray Master H200 Field Sprayer, with 200 Imp. (240 U.S.) gal. tank and 43 ft. boom coverage. Also available with 58 ft. booms.

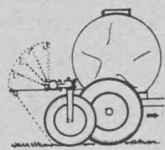
Why don't you see your local Golden Arrow dealer this week?



Golden Arrow's patented Clamp-On Nozzle—no troublesome threads or lock nuts, simple alignment without loosening clamp. The filter is in the boom to eliminate a sediment trap.



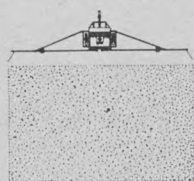
Float-operated Tank Fluid Level Gauge is accurate and easy to read. Standard on H400. Optional on other models.



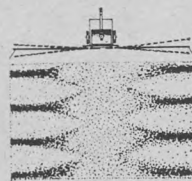
Golden Arrow's patented boom adjustment, with main rails and booms revolving as a unit to adjust boom height or direct spray in direction of travel.



Only the highest quality Alcan Aluminum is used in Golden Arrow tanks and booms. Lightweight, guaranteed not to rust.



STABILIZED



UNSTABILIZED

High "hidden losses" can result from boom instability which gives a damaging chemical dosage in some spots, leaving others completely barren. This is no more practical than allowing a seed drill to swing back and forth. Golden Arrow's properly-designed, fully stabilized booms save money by ensuring a constant, even spray pattern.



Spray Master H400 tandem trailer field sprayer with 420 Imp. (500 U.S.) gal. tank and 58' boom coverage.



The new Golden Arrow Fertilizer Spreader Model 601 offers effective 40 ft. coverage, has 3,000 lb. hopper capacity.

For more detailed information ask for our 16 page free booklet, "Things you should know about buying and operating a sprayer."



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SOLD BY PROMINENT DEALERS ACROSS THE PRAIRIES

Guide for a 1965 Seeding Program

Aim for maximum profits this year by selecting the crops and the varieties that can do you the most good

by JOHN CLARK

CRUSTY JIMMY GARDINER used to make headlines every spring in the 1930's when, urged on by reporters to divulge his seeding plans, he said bluntly, "seed more oats, cut down on the wheat and maybe try some flax this year." Whichever way the Minister leaned, so went the seeding plans of thousands of prairie farmers. His emulators, of course, acted on the premise that a crafty politician like Jimmy Gardiner would surely have the inside know-how about next fall's prices.

But the Hon. Mr. Gardiner didn't have that much faith in his department's marketing specialists; like most people he would try a few wild hunches — tempering them with the quantity and quality of seed in his bins, what his neighbors planned to seed, what grew well the year before, and the moisture and weed situation. So will most farmers plan their seeding programs in 1965.

Certainly anybody who takes only a cursory look at 1965 prospects could get confused: spring wheat prices dropped 15¢ a bushel in January; 3 years of durum wheat on hand and a 1960-61 price level; \$3 rapeseed; poor rye prices; a better price and delivery outlook for barley and oats; flax prospects about the same as a year ago; and a none-too-bright forage seed situation.

The factors of production — or "inputs," as economists like to call them — that govern your costs and income for 1965 are a little more straightforward. Some worth mentioning are:

- **Moisture.** This is the factor that usually limits yields in Western Canada and in 1965 the situation looks better than last spring. The Searle Grain Company's fall moisture analysis shows that moisture reserves on stubble, except in southern parts of the prairies, is fair to good. Summerfallow reserves are quite good all over.

If you have the wild oats and thistles under control, this might be the year to seed some of your stubble again instead of summerfallowing it.

Just before seeding, dig down with an auger and see how far the moisture extends. If you have 3½ inches of water in the soil — equivalent to at least 18 inches of moisture in clay, 24 inches in loams and 30 inches in sandy soils, plus 7 inches of rainfall during May, June and July — the odds say you will get at least a 15-bushel crop. This applies even to the Brown soil zone. Every inch of water above this 10½ inches could boost yields 3 bushels in the Brown zones and 4 or more in the Black zones.

- **Fertilizer.** Farmers with extra money in their pockets will be buying more fertilizer this year. Certain distributors didn't order as much fertilizer as they could have last summer, so if you haven't already ordered yours, you may have to drive quite a distance. Some companies were booked up before the end of February. Certainly, bargain hunters can't expect much price-cutting.

- **Machinery.** It's nice to be a machinery dealer in 1965. Some dealers have already booked a normal year's order. With so many people buying new machinery, it should be a good year to pick out really good used equipment.

- **Land.** The wheat prices and deliveries of the 1960's have boosted land prices. Easy credit has helped too. The pressure is now greatest in the Black soils and north where there are many small farmers. Larger neighbors can afford to outbid them for land but they have to pay higher prices. The situation is getting tougher than ever for starting farmers because established farmers can afford to pay more per acre for a parcel of land. They realize they can reduce their fixed costs per acre with bigger acreages. Before buying, see if you can rent cheaper. To compare buying and renting, you will have to know your exact operating costs; also, make certain you won't have to buy a whole new line of machinery at the same time you are buying land.

- **Seed Prices.** Except for rapeseed and good barley, these are un-

New Cereal Varieties

These are the new varieties you have been hearing about. All will be available in the spring of 1966.

Conquest Barley. The best-yielding malting barley Western Canada has ever had. Conquest looks much like Parkland, is a 6-Row, blue aleurone barley — but there the resemblance ends. It yields similar to Husky and Keystone, has a strong straw and resistance to loose smut, leaf spot and stem rust. It should prove a valuable hedge to growers who can't get malting grade but still want a high yield. Conquest has Vantage, Jet and Parkland in its make-up and was selected by the CDA at Brandon.

Manitou Wheat. This wheat will probably replace Thatcher, Canthatch, Pembina and Selkirk in the rust areas. The reason: good stem and leaf rust resistance. Developed from a Thatcher backcross by the CDA at Winnipeg, Manitou yields better than Thatcher, has a higher bushel weight and bleaches less.

Harmon Oats. Much like Rodney, Harmon is resistant to 7A rust. It was selected by CDA at Indian Head and Winnipeg, from a Rodney x OT604 cross. Unfortunately, Harmon like all other oats, is not resistant to a new rust threat, 6AF.

Noralta Flax. Another CDA variety, this one comes from a Redwing x Rocket selection. Noralta outyields Marine, and even Redwood on the Black and Gray-Black soils. Noralta has good straw strength and is resistant to Race 300 of flax rust.

changed or lower than they have been for a number of years. Seed wheat growers lost their big U.S. market this year and seed prices of some varieties are 20¢, or more, lower than 1964. Barley and oat germination was hurt badly last fall by frost; if yours was, be sure to check the germination.

Crop Price Outlook

You can make a price forecast two ways: be so general with terms like "possible increase in prices" and "prices might go down" that you might as well have not said it anyway; or, taking the risk of being completely wrong, talk in terms of dollars and cents. This article will take the second approach. If nothing else, it will give you a figure to base your own thinking on.

Keep in mind that the grain trade people and government specialists certainly aren't unanimous in their price forecasts. Like anybody else, their opinions can be very, very wrong.

SPRING WHEAT

Big crops in Australia, Argentina and France shook up the 80 per cent slice of the wheat export market that the U.S. and Canada had been sharing—and Wheat Board prices slipped about 15¢ a bushel. They should stay at that level until next fall and probably won't improve. This makes the price situation about the same as growers faced in the spring of 1962 and 1963. On the basis of about \$1.70 for No. 2 Northern (20¢ cents for handling, freight, etc., taken off), this means a gross income per pound of almost 3¢ a pound or about \$35 an acre for a 20-bushel crop. The good price and delivery outlook for barley will probably take back some wheat acreage and less will be seeded in 1965 than 1964. If, however, farmers attempt to ride along on the 6 months of high prices that wheat enjoyed in the 1964-65 crop year and deliver their wheat before August 1, it could increase the acreage. The extra income and on-the-farm storage would allow them

to hold wheat in hopes that prices would get better.

There is not much change in recommended varieties this year. Thatcher and Canthatch are the best yielding in Alberta and Saskatchewan with Thatcher being the best choice under droughty conditions and Canthatch having a little more stem rust resistance.

Grow Chinook if you live in a sawfly area. Seed Selkirk if stem or leaf rust is a hazard; the new rust resistant variety, Souris, won't be in commercial growers' hands until 1966. Pembina and Selkirk are the only wheats recommended in Manitoba.

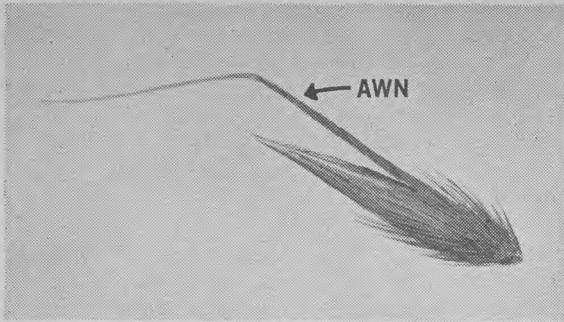
BARLEY

The outlook for good barley prices is better than it has been for many a year. This spring the price for 3 CW 6-Row was crowding rye. The Wheat Board's asking price for barley, and sales, have risen steadily all year. The carryover starting August 1 will probably be only about 80 million bushels so it is unlikely that a larger acreage than was seeded in 1964 will hurt prices. Some people expect the 1965-66 price for barley to average about 19¢ higher than the 1964-65 price.

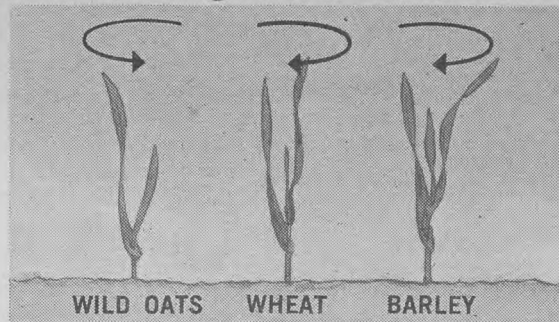
In Alberta, Keystone seems to be the best feed barley choice for the droughty southeast; in other areas Jubilee will give the best yields. Husky is a good second choice. Because Husky and Jubilee are both quite resistant to leaf rust they are the best feed barleys to grow in Saskatchewan. Keystone is the second choice. Herta, Jubilee and Keystone are your first choices in Manitoba; use Husky instead of Herta north of Red Deer Lake.

Maltsters and exporters will be hungry next fall for good malting barley. Much of what has been accepted this year is below normal standards and any grower whose sample was refused last fall couldn't go far wrong by resubmitting it again this spring.

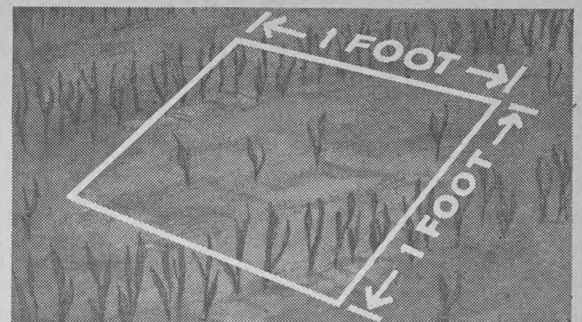
In Alberta, Gateway 63 is the best yielding 6-Row malting variety. (Please turn to page 62)



Seeds plant themselves! Moisture and temperature changes cause the long awn on the wild oat seed to rotate and move the entire seed in a twisting, burrowing fashion. Seeds may lie dormant up to 10 years before sprouting. One plant can produce as many as 250 seeds.



Leaves curl counter-clockwise. Young wild oat plants are sometimes hard to identify in grain seeded with a "one-way." You can tell them apart by the twist of the leaves. The first full wild oat leaf has a counter-clockwise curl. Wheat and barley leaves curl clockwise.



All it takes is 4. As few as 4 wild oat plants per square foot can cause serious yield losses. Why? Because that's 174,240 wild oat plants in an acre—infestation that can reduce yields by at least 6 bushels of wheat or barley per acre. In 40 acres that's 240 bushels lost to wild oats.

Just a "few" wild oats can cause a profit leak too big to shrug off.

Consider these startling facts about wild oats before you decide to ignore them:

You can't see them from the road. In fact, unless you get out and walk your fields, you might not even know they were there. Yet, in a young crop, just four little wild oat plants per square foot can cut your yield and cost you money.

Spring isn't far off. It's none too soon to find out some of the surprising facts about "how few" wild oats it takes to steal your profits.

A little simple arithmetic proves it: *Let's say you have as few as 4 wild oats per square foot. As you know, there are 43,560 square feet in an acre. 43,560 times 4 equals 174,240 wild oat plants per acre!*

Four little wild oat plants in a square foot. Easy to overlook in a young crop. But think of the valuable moisture and plant food that 174,240 of these plants will drain away during the growing season.

Field tests prove that 4 wild oats per square foot can cut yields by at least 6 bushels an acre. In 40 acres, that's 240 bushels—too big a loss to shrug off.

250 seeds per plant

What's more, when you consider that a single wild oat plant can shed as many as 250 seeds, which may germinate irregularly over a period of years, you can see what a costly pest wild oats are. And why more farmers every year are taking them more seriously.

They have come to realize that there's no such thing as "few" wild oats. That it's vital to walk your fields as soon as your crops begin to emerge. And if you spot as few as 4 wild oats per square foot, to do something about it *fast*. What do you do?

Pays you 3 to 1

The modern answer is farm-proven Carbyne. Carbyne is the wild oat killer that rescues crop profits *when and where* wild oats invade. Carbyne has been used successfully on more than 1½ million acres of crops, over the past four years. It

kills wild oats. It prevents reinfestation of those wild oats it kills.

One spraying with Carbyne is the simplest, lowest cost way of wild oat control known. In fact, you can expect to get back \$3 in extra yields for each \$1 you invest in Carbyne. Put Carbyne into your plans and you automatically get extra yields and bigger profits from early seed-

ing. You can plant as early as soil and weather conditions permit. Then, if wild oats appear, kill them with Carbyne.

Now 9 approved crops

You'll be in control of the wild oat situation with Carbyne. And Carbyne will help you lower cultivation costs, cut down future wild oat infestations, and reduce wild oat

dockage at the elevator.

Carbyne is approved and recommended for use on the following crops: Spring wheat, durum wheat, barley, sugar beets, flax, peas, mustard, rape, and sunflower.

Now — get the up-to-date facts about modern wild oat control. Send the coupon below for your free, full-color Carbyne folder.



WHEAT

"This is the third year we've used Carbyne. My two brothers and I sprayed 1,000 acres of wheat and were completely satisfied with the wild oat control we got. Without Carbyne, we would have had to re-seed some areas. As it was, we made extra bushels with Carbyne."

Charles N. Cunningham
Three Hills, Alberta



WHEAT

"We have used Carbyne on wheat for the last three years with good results. We like it for spot spraying. We do not have a wild oat problem all over every year, so Carbyne is a real help. Carbyne has paid us well, besides cutting down on future infestations."

Jim and Donald McPhee
Tisdale, Saskatchewan



WHEAT AND RAPESEED

"We've gotten over 90% wild oat control for the 3 years we've used Carbyne on wheat and rape. It has been a money-maker for us. Stopping wild oats with Carbyne has given us yield increases of 20 bushels of rapeseed per acre and 10 bushels of wheat per acre."

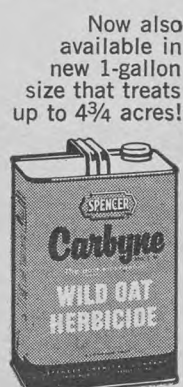
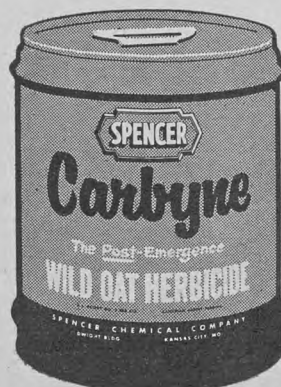
Harold and Arvid Brust
Swan River, Manitoba

Experience on over a million acres proves:

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wild oats...how to calibrate the sprayer...how to mix Carbyne...shows how to tell when to spray wild oats with Carbyne for best results. Just clip and mail the coupon today!



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Gateway and Parkland are next. Olli, though low yielding, is well liked by maltsters. Except for the dry southeast where Compana is best, grow Betzes as a 2-Row malting variety.

In Saskatchewan, Parkland is the best yielding malting 6-Row barley. Betzes and Compana are equal in Saskatchewan except Betzes is a little more resistant to lodging. Parkland is the only malting variety resistant to stem rust. Like the rest of the malting varieties it has no leaf resistance.

In Manitoba, Parkland is your first choice—except in the far north where Montcalm is just as good. The new high yielding Conquest barley won't be generally distributed until 1966.

Compare a crop of barley to a 20-bushel crop of No. 2 Northern wheat worth \$1.70 per bushel or about \$35

an acre. If the farm-price for No. 1 feed barley is \$1 your barley will have to yield 35 bushels per acre to equal \$35. If the farm price for 3 CW malting barley plus the premium is \$1.15, your barley will have to yield 30 bushels an acre to equal \$35.

OATS

The big oat crop of 1963 is still being shipped. This is the reason for the slow movement of the 1964 crop. But the outlook for oats this coming year is bright. If you can grow a good crop of oats, it might be a good bet. Quotas for the balance of this crop year are expected to loosen up.

A new oat variety which has more resistance to 7A rust than Rodney will probably be a replacement for it in 1966. Eagle is Alberta's best yielding oat though best suited to central Alberta. Victory should be

second choice though Abegweit does as well in northern regions. Garry and Russell, because they are somewhat rust resistant, are best in Saskatchewan. Rodney is the next best choice. Garry, Rodney and Russell perform equally well in Manitoba; unfortunately, none are resistant to a new race of oat rust.

On the basis of 60¢ a bushel farm price for No. 1 feed oats, you would have to produce 51 bushels per acre to equal a \$35 gross return.

DURUM WHEAT

With the possible exception of rye, this crop seems to have the most dismal prospects. Surprisingly, a considerable amount of seed has been sold this spring. There are still 3 years of normal supplies sitting in country elevators and farm granaries. Prices may slip further and deliveries will be slow. Many durum growers are expected to go back to spring wheat and barley.

FLAX

Flax prices have held steady and relatively strong. Little change in demand or supplies is expected either in the U.S. or Canada and no drastic price change in the fall is expected. Of course, as with all special crops, any change in the thinking of a large number of farmers in the U.S., Canada or Argentina could drastically affect the price one way or another.

On the basis of \$3 a bushel farm price for No. 1 CW flax, you will need 12 bushels per acre to equal a \$35 gross return. If the flax brings you \$2.50 you will need 14 bushels to break even.

Manitoba grows about half the flax in the country and the scientists suggest Redwood and Rocket for the areas south of Hamiota and east of the Riding Mountains. This applies to all the south except the extreme southeast corner where only Rocket is recommended; and north of Lunder where Raja and Bolley will do well. In the rest of Manitoba, there is not much to choose between Rocket, Redwood, Bolley and Raja. Stay away from Arney, Cree, Marine and Sheyenne since they are all susceptible to Race 300 rust. Watch what Bolley you buy since a lot of poor commercial Bolley was trucked into Manitoba from the U.S. last spring.

Because of Race 300, Redwood, Rocket, Bolley and Norland should be grown in southern and central Saskatchewan. Remember, flax rust overwinters in the soil and is different from the grain rusts. Raja is a little late for northern Saskatchewan.

Cree and Redwood are the highest yielding flaxes in Alberta though both are late for northern regions. Raja gives respectable yields and is a medium early variety. The old favorite, Redwing, is early but susceptible to all races of rust.

RAPESEED

This is the glamor crop for 1965. Those 5½¢ a pound prices made a lot of farmers wish they had seeded more in 1964. Even the most conservative people think the rapeseed acreage will climb to 1 million acres this year (up from 700 thousand). Optimists think 1½ million acres will be seeded. In fact, some rapeseed growers in the Peace River

area aren't going to seed it in 1965 because they feel too much rapeseed will be sown and prices will slump.

If the rapeseed acreage is over 1 million acres, what will happen to prices? That's the \$64,000 question. Some say the average price will not go below \$2.25; some think it will stay around \$2.50. If 1½ million acres are sown, one grain exchange trader felt the price would surely slip to \$2 or less. It all depends on exports. The size of the Japanese rapeseed crop and the Spanish and Italian olive oil crop has had an important effect upon price; these countries all had short crops last year. The fall soybean market is expected to be reasonably good and if traders can substitute rapeseed for soybeans it should add steadiness to the rapeseed market.

Certainly, this is not the year to lean on rapeseed for most of your income—unless you can grow a big-yielding crop. It looks too much like the up-and-down hog markets used to look. Flea beetle control and careful harvesting will be important.

On the basis of \$2 farm price for rapeseed, you would have to produce 17.5 bushels (about 1,000 pounds) per acre to equal \$35 gross returns per acre. At \$2.25, 15.5 bushels will do it.

It's almost impossible to get any Echo now since most of it has been bought up. Use Arlo if you want another Polish type. Don't buy the Polish "variety" being peddled around since it is just a mixture of varieties; Polish (or turnip rape) is a species of rapeseed, not a variety. Polish types mature in 75 to 95 days.

Tanka is the best yielding Argentine type of rapeseed; Golden and Nugget are other varieties. Argentine types take 3 weeks longer than Polish types to mature and so are dangerous to grow in the north.

Other Cash Crops

- **Rye** seems a poor choice. Even 3 CW barley recently brought a higher price. Rye is trading very slowly and no good markets appear to be showing up. Prolific is the best spring rye.

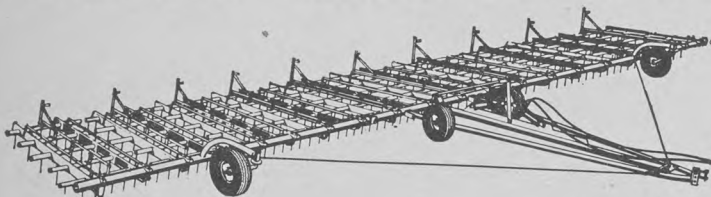
- **Sunflowers** disappointed many farmers last year when early frosts hit but, despite this, the acreage of the oilseed type is expected to climb to over 100,000 acres (82,000 acres last year). An outright contract price of about 5¢ a pound is about as good as can be expected. The Peredovik variety with 45 per cent oil should draw a premium; Admiral and Advent produce 35 per cent oil but are resistant to rust. Peredovik takes 120 days to mature while Admiral and Advent only require 105 to 115 days.

Contracts for large-seeded sunflower, the eating type, will average around 5¢. Usually about 8¢ is paid for large seeds and 3¢ for small seeds. Commander is the best variety and it matures in 105 to 115 days. At 5¢ a pound, you will need 750 pounds of sunflowers to equal \$35 an acre. Last year's sunflower yields were closer to 500 pounds than the usual 800 to 900 pounds.

- **Mustard** contracts at 5¢ a pound for Yellow and 3½¢ a pound

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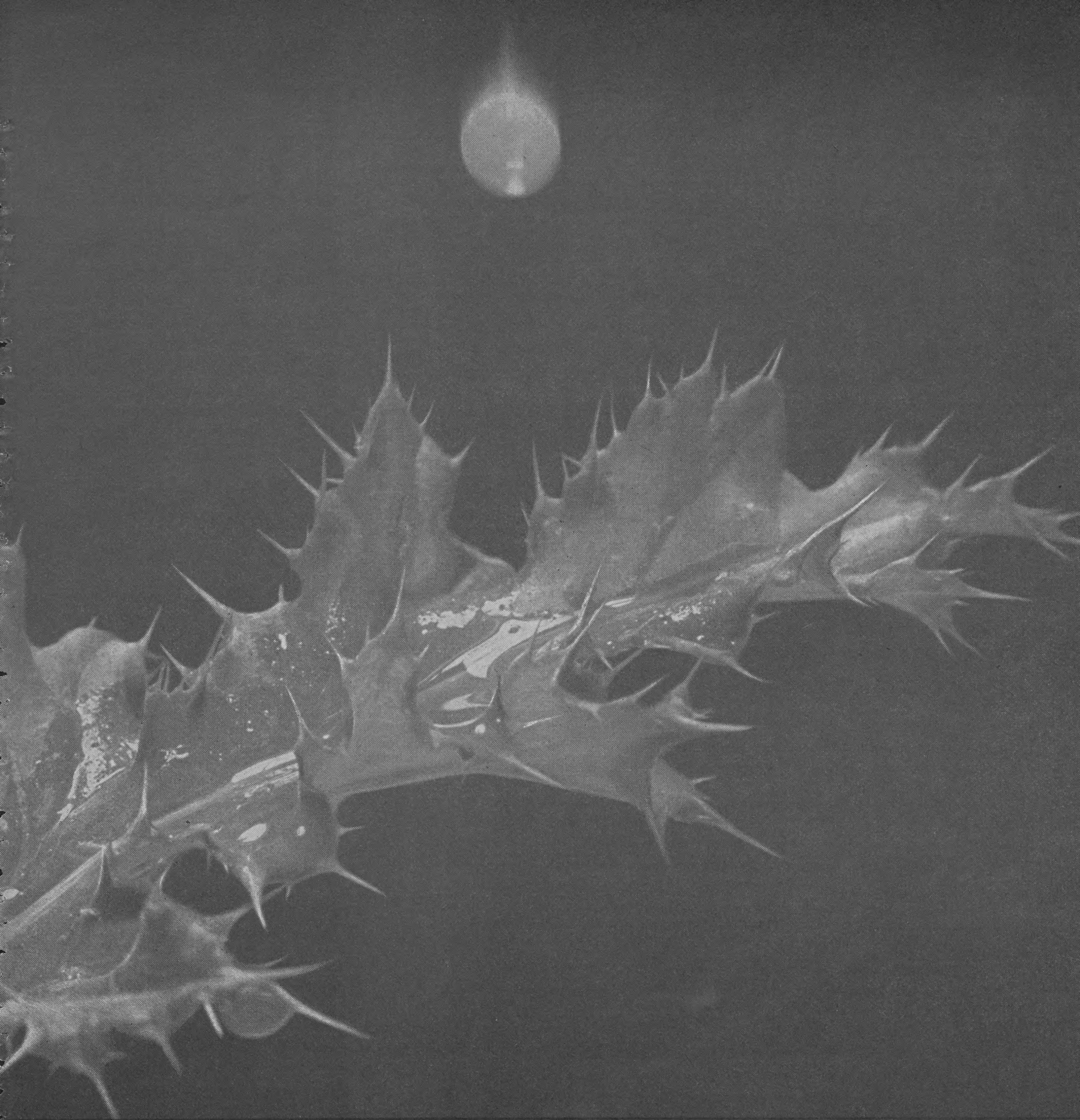
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for Oriental were going begging early in 1965. Some rapeseed growers, worried about the 1965-66 market, will probably try mustard. The one advantage of mustard—it can be straight combined—might interest rapeseed growers who ran into shattering troubles last fall. Yield, of course, is the big thing. At 5¢ a pound, you will need 700 pounds to equal \$35 an acre.

• Field peas are contracting for closer to \$1.50, outright, than the

\$1.85 to \$2 that farmers received last year. Manitoba produces over 70 per cent of Canada's field peas and the acreage is expected to rise to over 50,000 acres this spring. Century and Chancellor are the two best varieties. Seed before May 20.

• Grain corn is coming to Western Canada—but slowly. The growing period is about 120 days. Grain corn is unlikely to mature enough to harvest as grain, except in the southern prairies, and will be used

more as silage. Morden 88, AES101, Morden 77, and Trojan F75 are the best hybrids to grow. Second choices are KN2, DeKalb 29, Pride 4 and Funks G2. Expect to pay about \$10 to \$12 for a good hybrid corn but you only need to plant one-fifth of a bushel per acre. The old varieties which sold for \$5 a bushel have no hybrid vigor and yield poorly.

Corn needs about twice as much fertilizer as wheat. The fertilizer should not be drilled with the seed; put it in a band beside and below the seed or you will get "burning." Used corn planters can be picked up in the U.S. for about \$100; they would do a much better job of planting than a drill. Some farmers use a low-priced sunflower header when combining grain corn.

FORAGE SEEDS

• Alfalfa seed. On the surface, growing alfalfa for seed seems like a good bet. The Manitoba Department of Agriculture forecasts 30¢ per pound prices for the next few years. But some people in the trade think northern Saskatchewan's big acreage which didn't produce much seed last year, could easily depress prices to the 20¢ to 25¢ level.

• Sweet Clover Seed. Last year's miserable 5¢ per pound price is ex-

pected, by some people in the trade, to be repeated this year. A few government seed specialists are more optimistic and forecast 7¢ to 9¢ prices. Weevils hurt the 1964 seed crop badly, but the trouble is, if you use heptachlor to kill the weevils you can't use the sweet clover forage for feed.

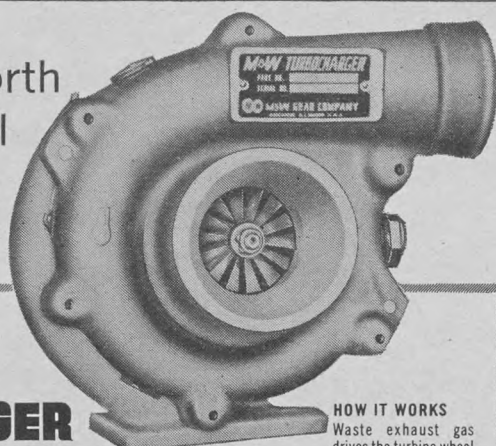
• Climax Timothy seed. Even though growers have been receiving about 25¢ to 30¢ a pound for Certified Climax, the price is expected to slump over the next few years. A European shortage and no Climax crop in Saskatchewan appears to be the only combination that will hold prices up. A 10¢ to 15¢ per pound price isn't too unlikely.

• Meadow Fescue seed. Even though there is little seed on hand, production from the present acreage could easily double last year's seed production. One estimate is a 10¢ to 12¢ price this summer.

• Bromegrass seed. Couch grass has badly hurt the chances for a clean crop of brome in Manitoba and in parts of Saskatchewan. Certified Lincoln might again bring over 20¢; commercial brome is expected to be in the neighborhood of 10¢ a pound in 1965.—John Clark is Director of Information, United Grain Growers Ltd. V

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Case 930	112	81	Deere 3020	78	65
Case 600	80	49	Deere 4010	110	84
Case 900	88	70	Deere 4020	115	91
IHC 560	83	60	Deere 5010	145	121
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All parts of the ladino plant are 3 to 5 times as big as those of common white clover. Its thick, fleshy stems, called stolons, root readily at the nodes, from which the leaves and flowers arise, and a single plant may cover several square feet. Because the stems lie flat on the ground, they are not grazed or cut. Thus the forage consists only of leaves and leaf stalks.

Ladino forage contains as much as 30 per cent protein, dry matter basis, and is often more than 85 per cent digestible. These values are well above levels found in forage of stemmy species. Stems of forage plants get very woody and lose protein and palatability as they mature.

Ladino improves the quality of both hay and pasture. One-half pound of seed is often included in alfalfa mixtures to improve quality and increase aftermath. Ladino is best seeded with one or more grasses. Because ladino is one of the smallest seeded legumes, 2 pounds per acre is the most ever needed. One of the most efficient of legumes for nitrogen fixation, ladino improves grass growth. Grasses in turn protect the clover in the mixture against winter injury. A mixture of grass and ladino is more easily cut and cured for hay than ladino alone.

Dr. F. A. Stinson, of the Kemptville Agricultural School, Kemptville, Ont., warns that a mixed stand of hay should be cut early to pre-

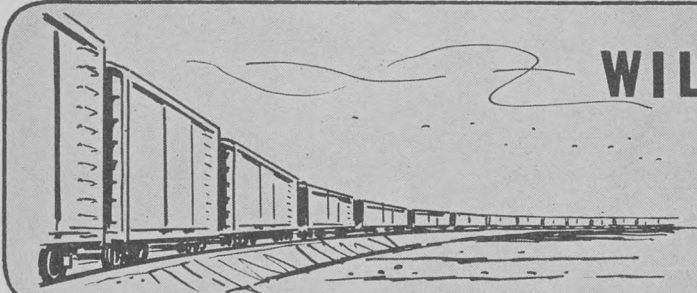
vent the ladino being smothered by tall plants. Indeed, ladino produces best when cut or grazed at 10 or 12 inches. Winter injury can be prevented by avoiding close fall grazing. It does not tolerate as much flooding as birdsfoot trefoil, and is comparable to alsike clover in flood resistance. Like both these legumes, it reseeds itself and thereby often can re-establish a flooded stand. More tolerant to wet land than alfalfa and red clover, it is slightly less wet resistant than alsike. Ladino clover responds remarkably to fertilizer and thrives on fields otherwise considered too droughty when it is well manured and fertilized with phosphate and potash. V

Prevent Hardpan

IF YOU ARE planning a continuous cropping program for your farm, don't forget the dangers of hardpan. You will compact the layer of soil just below cultivation depth if you grow grain continuously, or use heavy tractors, tillage machinery and harvesting equipment on wet fields. Compaction prevents roots growing deep and drawing plant food and water from deeper soil. It also interferes with air and water movement into the soil. Deep cultivation, to break up the hardpan, is expensive and often the yield increases do not pay for the cost.

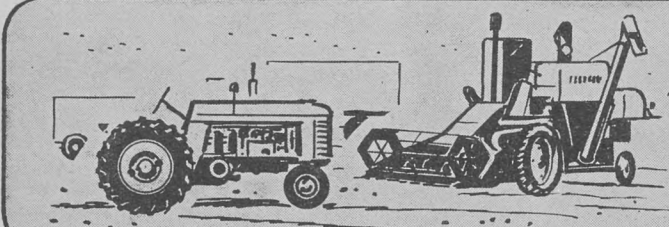
Soil specialists recommend such preventive practices as: less tillage when fields are wet and easily compacted; the least possible use of heavy implements; deep fertilizing to encourage deep root growth; addition of trash, manure and green manure crops to the soil, and growing deep-rooted grasses and legumes. The latter is an effective way to improve soil aeration, and increase water-holding capacity and subsurface drainage. V

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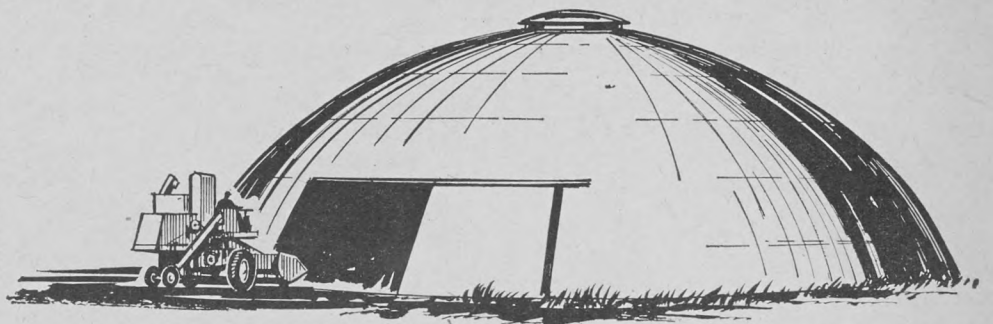
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How to Pay Less Income Tax

You must file income tax forms if:

- You had a taxable income last year
- You want to include last year's operations in an averaging period
- You keep a basic herd
- The Taxation Office requests you to file

Here are clear answers to your questions on how to compile your income tax returns and to keep payments to a minimum. They were prepared by J. L. Drew and Gary Carlson of the Saskatchewan Department of Agriculture

INCOME TAX forms should be filed and paid by April 30 and you should keep a copy of the return in your records. Late filing prevents use of that year's operations in any averaging period and carries a penalty of 5 per cent of the tax owing plus 6 per cent annual interest on the unpaid balance. There is an installment provision which requires that an amount equivalent to two-thirds of the estimated tax payable for the current year or equal to two-thirds of the actual tax paid last year be submitted by December 31.

There is no substitute for adequate records, either for annual filing or as a permanent record for future purposes. An adequate record contains information of your operating costs, returns and capital transactions. You must keep a schedule of capital cost allowances on depreciable assets, some record of produce used in the home, medical expenses and donations made during the year.

What income items are taxable?

(1) All cash receipts for produce sold during the year, including sale of soil, gravel, sand, stone and wood. (2) Patronage dividends earned from farm operations. (3) Rent. (4) Severance or inconvenience payments including surface rentals for gas and oil. (5) Off-farm income (wages, fees, investment income, custom work). (6) Insurance received from loss of crops or livestock. (7) Marketable produce used in the home (valued at cost of production). (8) Farm produce traded off in settlement of an expense. (9) Wheat Board payments and cash advances on farm stored grain received during the year.

What income items are not taxable?

Capital sales such as land, buildings and equipment, patronage refunds for personal expenses, family and youth allowances, unemployment insurance benefits, inherited

money, borrowed money, life insurance disbursements, insurance payments received as a result of loss to capital items, and garden produce not produced for sale against which costs have not been charged.

Machinery rebates and government grants on capital items are not considered income, but the value for capital cost allowance must be reduced accordingly.

What method is used to report income?

Farmers usually use the "cash" method to report income. The "accrual" method requires payment based on the production for the year, rather than sales. Inventories are also used to compute income. Wide fluctuations in production result in a generally higher tax being paid under the "accrual" system. There are various methods of leveling out income under the "cash" method.

What expenses are deductible?

All cash operating expenses including wages paid to hired help, plus the cost of their board and room, wages to children in lieu of hired help (but not board), up to one-quarter of farm home repairs, normally no more than two-thirds of the car operating costs, a reasonable portion of electricity, phone and insurance on the house. All expenses on houses used only for hired help or rented out, capital items up to \$100 in value, weed control, re-clearing of previously broken land, well drilling costs, interest on loans for productive purposes, farm repair bills, grain or livestock received in trade, cash or crop share rentals (if landlord's value of grain is included in receipts), and the purchase of public utilities.

What expenses are not deductible?

The purchase price of depreciable assets over \$100 in value cannot be claimed in a single year but is spread over a period of years by

allowing a specified amount each year for depreciation (capital cost allowance). Extensive repairs to a used machine in a year in which it is purchased should not be charged as an operating cost, but added to the purchase price and capitalized. Expenses on houses located off the farm and the value of seed or feed grown on the farm are not deductible. Clearing and breaking land is considered a capital improvement and not chargeable as an expense or as a capital cost allowance. Payments on the principal parts of farm loans are not expenses but annual interest payments are allowable as expenses. Traveling expenses are not normally included if no transactions take place as a result of these expenses. Legal fees associated with the purchase of depreciable assets are added to the value of the asset for capital cost allowance. Legal fees associated with the purchase of land cannot be claimed. The value of a farmer's labor cannot be added to either expenses or the capital cost of home-built assets, nor can he deduct wages for his wife.

How does capital cost allowance work?

Rather than allow the purchase price of machinery and buildings to be charged in the year of purchase, a recovery of capital cost is allowed over a period of years as part of the farm expense. You should list all assets on hand. Any asset previously omitted from a schedule can be added at its original price.

Values on buildings and improvement (fences, dugouts, dams, power lines) should be included on the contract when purchasing land because



they can be claimed under capital cost allowance.

There are two ways of charging for capital cost allowance under Part 11 or under Part 17 of the Income Tax Act. Under Part 17, which allows for a "straight line" depreciation schedule in which the rates are applied to the original purchase price of individual assets, an item can decline to a zero value for income tax purposes. Capital gains occur when you sell these assets for more than the depreciated value at the time of sale. This gain is tax free and this can be a big advantage in using Part 17. You can only claim capital cost allowances for the months the asset was on the farm.

Under Part 17, it is usually to your advantage to trade equipment, rather than buy for cash, provided the net difference in costs makes up for the machine traded in. This procedure allows a higher level of depreciation to be claimed on the new asset since the price with a trade is usually considerably higher than the cash price. The increased price you got for the old machine will not affect your taxable income since capital gains under Part 17 are not taxable.

Under Part 17, first depreciate those items that you are likely to trade in soon. If you need additional capital cost for the year, use any rate from zero to the maximum on the remaining assets. You lose depreciation when you sell the item before it is depreciated out. On the other hand, if you depreciate too fast by using maximum rates all the time you may have very little depreciation allowance to apply against a high income year. The 5-year average will usually take care of this problem.

A "reducing balance" charge is made under Part 11. Items are grouped into classes and allowances include the cost of all assets in a class less previously claimed allowances.

When you sell an asset for more than the undepreciated capital cost of the class, the excess becomes income for the year. If you sell for less than the capital cost allowance for the class, it has the same effect because the future capital cost allowance of the class is reduced by that amount. The rates under Part 11 are double those under Part 17 and assets are depreciated for the entire year, regardless of the length of time they are on the farm.

The farmer is not allowed to go to Part 17 from Part 11. However, farmers can go from Part 17 to Part 11. Landlords must claim under Part 11. Under Part 11 the difference between the purchase price and trade-in value is really all that can be claimed. Unless machines are used a good deal or machinery prices start to move downward, this is likely to be less than can be claimed under Part 17.

Regardless of the part used, the rates of depreciation are maximum

rates and any amount from zero to the maximum may be claimed in the year.

Special problem areas include water and sewage systems. If the system is for the house only, one-quarter of the depreciation for the entire unit and further repair and operating costs can be charged against the farm operation.

If the system is used for the farm also, then the farm share is the outdoor system including water transmission, less \$200. Where the pressure unit is in the house it is considered part of the water transmission system. The farm share is entered into the capital cost allowance schedule along with one-quarter of the personal share.

What about years when a loss is experienced?

A loss (taxable income below zero before personal exemptions are calculated) may be carried back to the previous year or ahead up to 5 years as long as it is not taken back into a previous averaging period. Losses from previous years are absorbed this year and if losses again occur, carried to next year. Losses from off-farm investments can only be used to offset farm income of the same year and cannot be carried back or forward as farm losses.

What is meant by averaging out income?

Farm tax management decisions are simplified by leveling out incomes over a 5-year period by using the 5-year average. Highly variable returns, together with rather stable costs, result in a fluctuating taxable income. Progressive tax rates mean more tax is paid when income fluctuates. Therefore, you should consider provisions to level out taxable income. You can make some annual adjustments by manipulating operating costs, returns and capital cost allowances. You may sell or hold back your produce; cash advances can be taken or not taken; operating expenses can be adjusted by charging or prepaying them, provided you are filing on a cash basis.

Annual adjustments should not be used if they lower actual farm income. The farm should be managed so income is as high as possible and the 5-year average used to level out the taxable income.

For those who discontinue farming or an enterprise within the farm, the extra income received from the sale of farm produce and livestock inventories can be spread equally over the current year and the two preceding years. If the income is spread into a year in which a return was not filed because of no taxable income, it is possible to file for that year now. There is no penalty as no tax was due.

The 5-year average is one of the more profitable tools in making out income tax returns. No overall recommendation can be given as to whether or not one should average in one particular year, but you should take advantage of this provision when it is to your advantage.

The averaging period consists of the present year of filing, plus the

four consecutive preceding years in which you filed a tax return on time. You cannot include any years included in a previous averaging period or years prior to 6 years before the year of averaging.

The first year in the averaging period is most important. That will be lost if not averaged now. If the year is fairly normal, it might pay to lose it. Future expectations of income, costs and exemptions, may indicate that it might be better to wait and average next year or in future years.

To be eligible to average, the chief source of your income must be farming. Landlords, to be eligible, must rent on a crop share basis. The decision to average must be made before April 30 but cancellation is permitted within 30 days.

What is meant by basic herd?

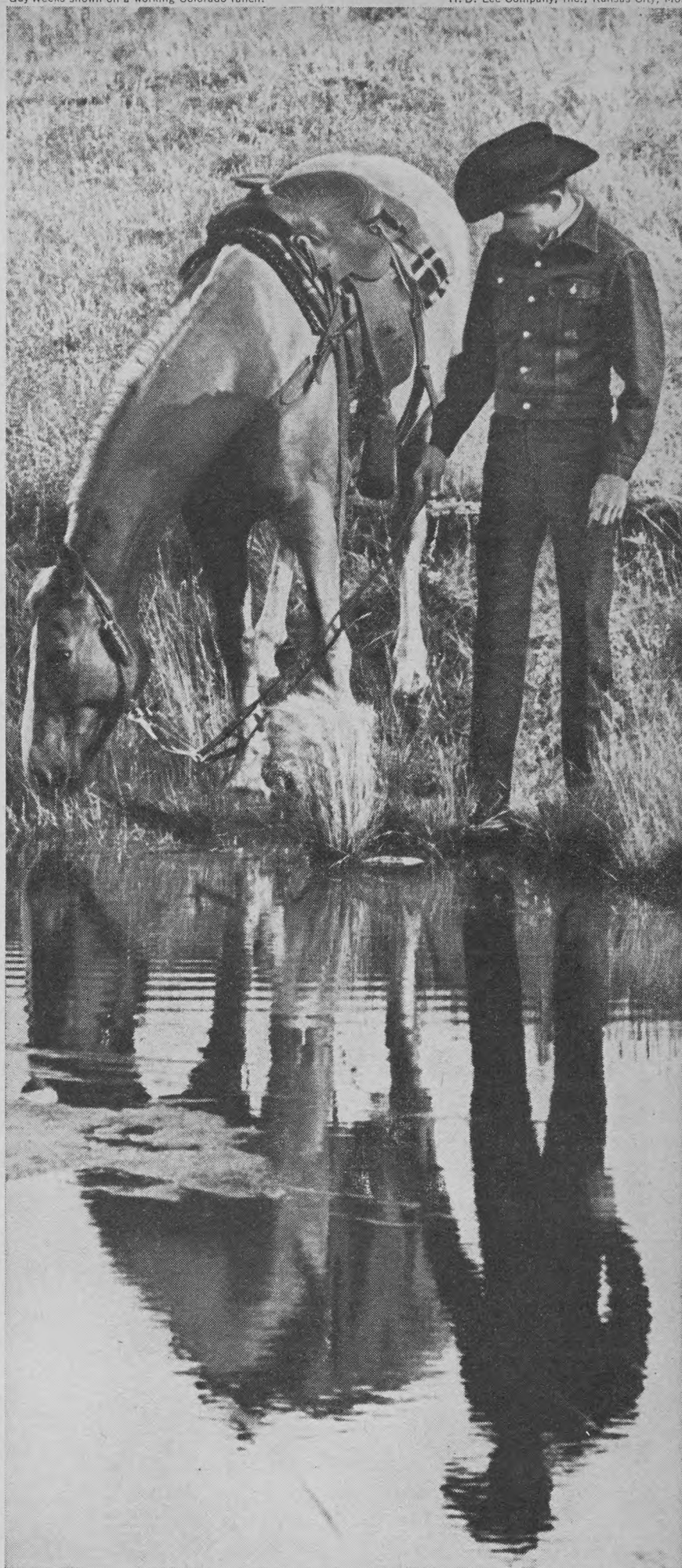
A basic herd is strictly a number of animals that you have acquired without reducing taxable income. Individual animals are not identified. Establishing a basic herd for tax purposes means that the sale of these animals will not be considered income. Anyone maintaining a herd of livestock can apply. But you must have filed returns since the start of the enterprise or for three consecutive years prior to your application, whichever is less, and continue to file each year the basic herd is held. A young farmer establishing a herd of livestock should consider building up a basic herd. Anyone who has received livestock as a gift, inheritance, or has purchased them without showing the cost as an expense has the basis for establishing a basic herd.

You can enlarge the basic herd by natural increase. The fair market value of animals maturing in the year of increase is added to your income for that year. This allows you some stabilization of income because the herd can be increased in low income years, especially the first years of farming when income is low. Then there is no need to add when income is high.

The main benefit is when a herd is sold. You pay no tax on sale revenue from basic herd animals.

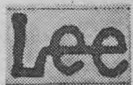
What about family operating arrangements?

In partnerships, one partner files a return for the entire unit and each partner adjusts the income to his share. An operator can pay family members and they remain dependents unless they earn over \$950. Arrangements whereby labor and equipment use is traded off between family members should be handled in a businesslike manner. Incorporation may allow you some tax saving, but should be carefully investigated. No wage can be claimed for the operator's wife. She can earn up to \$250 per year, tax free, but this must come from off-farm sources. Before you start to prepare the T1 general return pick up a copy of the *Farmers' and Fishermen's Guide* from any post office. All income tax inquiries should be addressed to the local district taxation office. ✓



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Heat Loss Causes Ventilation Failure

You must supply heat to get rid of moisture

FARMERS ARE AWARE of the advantages of ventilation in livestock and poultry buildings. Many farmers have hopefully installed exhaust fans, fresh-air inlets, and electrical controls as recommended, only to find the walls still damp, the floor still wet, and the animals still coughing.

J. E. Turnbull, engineering specialist at the Western Ontario Agricultural School, says the answer to these problems can be traced to heat balance. The term "heat balance" refers to the total supply of heat in a controlled-environment building. If more heat is lost than the animals produce, ventilation difficulties appear.

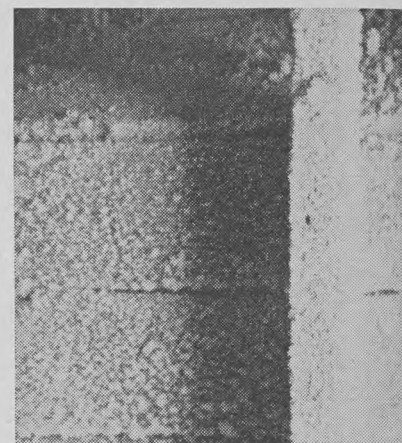
Here is what is involved in maintaining a heat balance. Animals produce heat and water vapor. A surplus of heat is needed to make sure that all of the moisture from the animals and their droppings stays in the air as water vapor. The purpose of the exhaust fans is to suck this warm, moisture-laden air from the building, carrying off the water vapor as fast as it is produced.

This exhausted air is immediately replaced by an equal amount of cold air from outside. The heat needed to warm this entering air to room temperature is the major heat loss. Also, the building itself loses heat to cold air outside by conduction through walls, ceiling, doors and windows. The trick is to conserve enough animal heat to equal or exceed heat losses from ventilation and conduction. As it gets colder outside buildings lose heat faster, both by conduction and by ventilation. Cold weather, therefore, makes it harder to maintain a heat balance. It also makes wall and ceiling surfaces colder. These are more likely to cause moisture condensation, often the first indication of faulty ventilation.

How do you maintain a heat balance, even in very cold weather? First, reduce the heat losses.

1. Insulate foundations, walls and ceilings with thick, inexpensive insulation materials. Insulation reduces building heat loss and helps keep inside surface temperatures higher preventing surface condensation. In brooder houses where floor temperatures must be high, don't overlook water proof perimeter-insulation around the floor to reduce heat loss to the cold soil outside the walls.

2. Don't overventilate. Use one small fan for adequate ventilation in cold weather, supplemented by one or more larger fans for increased ventilation rates in milder weather. Electrical controls for the fan system should be set up to automatically control ventilation according to moisture produced inside and weather conditions outside.



[Guide photo]
Ventilation and enough heat would carry this moisture out of the barn

Second, increase the heat gains.

1. Keep the building filled to capacity with livestock. Livestock which are good heat-producers, such as adult chickens and cattle, give off enough heat to keep a heat balance. If more cattle are put into a barn, the ventilation rate will have to be raised to control moisture but the heat balance situation will be better in spite of the increased ventilation heat loss. You should expect a heat deficit when the total animal weight is small in relation to building size, such as swine farrowing and finishing buildings. Pigs are poor heat producers.

2. Add supplementary heat to make up the heat deficit. Supplementary heat can be supplied from brooder stoves, electric space heaters or heat lamps. Even the milk cooler becomes a supplementary heat source for the milk room, if the heat from the condenser unit can be discharged inside the room.

Obviously there is a lot more involved in good ventilation than just plugging a fan into the power outlet. V

Skunk Control

EACH YEAR there are farmers, reporting that they have unavoidably combined a skunk, who seek information on how to rid their combines of the odor. W. R. Merryweather, director of the Family Farm Improvement Branch, Saskatchewan Department of Agriculture, has some new information regarding skunk control.

This information suggests that skunk odors on pets, clothing and buildings, may be neutralized by the liberal use of deodorant which can be purchased in most drug stores as a pressurized deodorant bomb. Tomato juice, vinegar, ammonia or a weak solution of household chlorine bleach is also suggested for



makes U.G.G. agents best

An agent who is unusually expert at grading grain can give better grades to farmers. He knows, for instance, when cleaning or drying will return a profit to his customer. Because he hasn't got a binfull of mistakes, he can give the benefit of any doubt in borderline cases to the farmer.

United Grain Growers can't wait while agents slowly become expert during long years of practice alone in an elevator. U.G.G. has developed a special Advanced Agents Training Program — a series of courses that will give them top technical experience in a short time. Different courses are being designed for grain grading, soil fertility, feeds and feeding, farm chemicals, etc.

Each special course proceeds like the grain grading course, above. Agents gathered for this one in Peace River, Alberta—some came from over 100 miles away. Here's how the course operates:

Under the eagle eye of U.G.G. grain inspector Bert Hagerty, the agents grade hundreds of samples on the long table. Each one is a tough test of their skill. The instructor makes sure every agent understands the reasons for each grade and he gives them tips learned from over 20 years in the grain inspection business.

Through an Advanced Agent Training Program, U.G.G. is ensuring that your agent is the kind of man a Farmers' Company would be proud to employ. You will get better service too.

All U.G.G. training courses wind up with a stiff test. A few of the questions U.G.G. agents must be able to answer correctly in their Grain Grading Course are printed below. Can you answer them?

1. The varieties known as Pelissier and Golden Ball grade no higher than what grade?
Answer.....
2. A sample of 3 CW 6 Row Barley contains 5% wild oats, 4% small seeds. What dockage would you place against this sample?
Answer.....
3. A sample of barley of 3 CW 6 Row quality containing 35% 3 CW 2 Row Barley.
Grade?.....
4. A sample of oats showing no visible sign of heated kernels, but containing a strong heated odor.
Grade?.....
5. A sample of rye weighing 55 lbs. per bushel, containing ½ of 1% of ergot, but otherwise sound.
Grade?.....
6. A 500 gram sample of 3 Northern wheat containing 5 stones after cleaning.
Grade?.....
7. A sample of 4 Northern wheat containing 60 kernels of ragweed in 500 grams.
Grade?.....
8. A sample of red spring wheat of good quality, but weighing 57 lbs. per bushel.
Grade?.....
9. A sample of barley having the requirements of 3 CW 6 Row barley, but containing 5% peeled and broken.
Grade?.....

ANSWERS BELOW

ANSWERS:

1. Extra 4 CW Durum. It is not equal to Minimum. 2. 8% dockage. Only 1% wild oats allowed in 3 CW 6 Row. 3. No. 1 Feed Barley on account of over 15% 2 row kernels. 4. Rejected oats on account of heated odor. 5. C.W. ergot Rye. Only 0.33% allowed in 3 CW Rye. 6. Rejected No. 3 Northern Wheat on account of stones. 7. No. 4 Northern Wheat. 8. No. 3 Northern Wheat. It would have to weigh 58 lbs. to be equal to No. 2. 9. No. 3 CW 6 Row Barley. Limit of 5% peeled and broken for 3 CW 6 Row.



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BUILDINGS

removing the odor from clothing or pets. Chloride of lime can be used to deodorize soil contaminated with skunk scent.

Skunks living too close to the farm home for comfort, may be captured in baited box traps or wire cage traps covered with burlap. Skunks rarely release their scent in a dark container. The trapped animal may be released far away or killed painlessly with exhaust from a car or tractor.

Where skunks have dens under buildings, they may be discouraged with repellents like naphthalene flakes, paradichlorobenzene or moth balls, placed under the floor and near the den entrance. Foundation openings should be closed after the skunk leaves, with concrete, sheet metal, or wire netting.

Skunks hunt at night and prefer insects, rodents, fruits, and garbage. They also like poultry and eggs. They are not good climbers and kill birds that are near the ground. This may be mistaken for poultry killings by rats, weasels, mink or badgers. Skunks can be kept out of poultry houses by closing all openings each night. Three-foot wire netting, with 1 foot placed below ground and the lower 6 inches bent outward, protects poultry yards. V

Stressed-skin Shed Roofs

ROOFING PANELS that can span most farm buildings without interior supports were described by designer George B. Willson, at the annual meeting of the American Society of Agricultural Engineers.

Stressed-skin construction involves bonding structural elements such as rafters to the covering of the building. Panels 4 feet wide and 18 to 20 feet long using ½-inch plywood have been tested.

Bonding the rafters and the skin together makes them act as a single structural member that is stiffer and stronger than the rafter alone. These panels are 50 per cent stronger and twice as stiff as the unbonded rafters.

Weatherproof glues, that will cure at room temperature under moderate pressure, make it possible to build stress-skin panels without special equipment. Nails provide enough pressure to hold the panel together until the glue has cured. The panel must be stored in a dry place.

Stress-skin panels can be used with any sidewall construction. A good weatherproof paint is the only cover needed to give years of service. V

Mechanics

Farm Water Supplies

YOU CAN'T HAVE a farm without water. Often the loss of a water supply can threaten to end farm operation. V. I. Spencer, agricultural engineering extension specialist with the Ontario Department of Agriculture, says that often the water has simply been pumped out. You probably have water on tap, or at water bowls, in almost every building on your farm. You have a bathroom with hot water for showers and baths. You may have an automatic washer or a milkhouse with hot and cold water for cleaning. Because this water is so handy you automatically use it. You may have doubled or tripled the number of livestock on your farm in the last 20 years. When

your well goes dry, it is often because you are simply trying to get more water than it can produce. Many of the wells which are being used today were dug in the 1940's or earlier. These wells were not designed to produce large quantities of water.

How to improve your short water supply? Should you deepen your present well? Should you dig a new one? Should you dig a farm pond so you have an extra supply to use with your wells? The answers to these questions depend mainly upon the underground conditions at your farm.

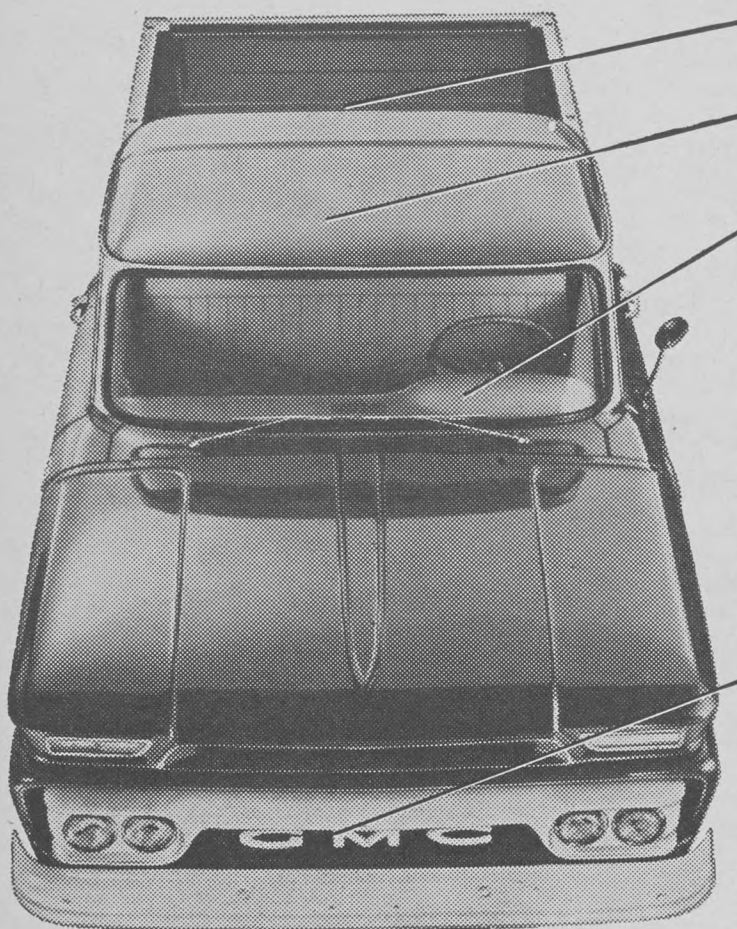
There are many types of underground conditions. In some areas,



The dugout under this snowdrift has already stored some summer water

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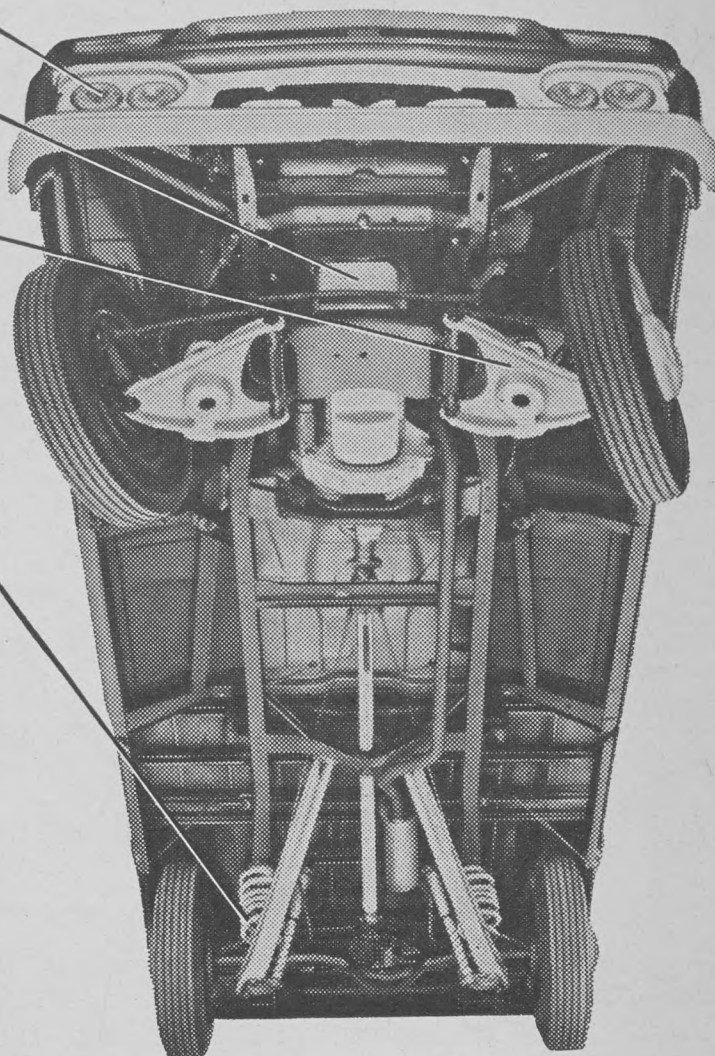
The in-line engine works and works, yet requires little attention. Why? Because of its seven-main-bearing crankshaft, its accessible full-flow oil filter.

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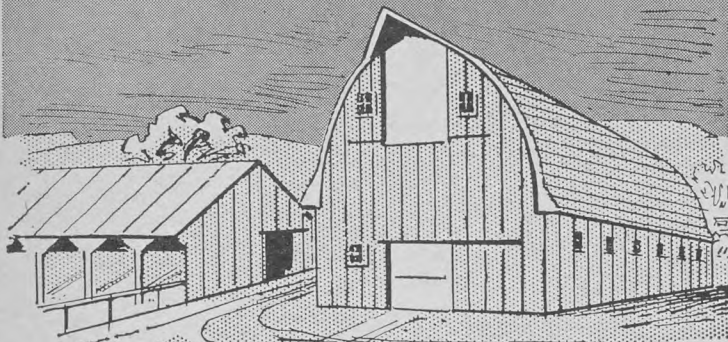
Coil spring rear suspension makes light work of heavy loads. All-rubber-bushed control arms need no maintenance.

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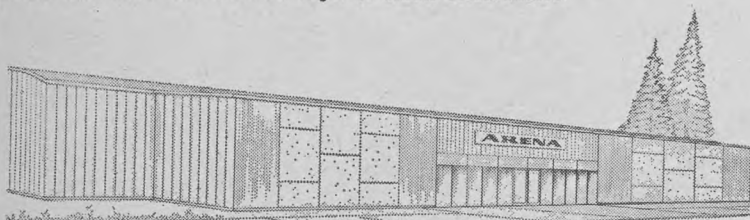
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MECHANICS

there are only a few feet of soil covering the bedrock. If you are going to construct a well, it must enter the rock. Some types of rock yield a much greater supply of water than others. Some yield clear pure water, while others yield mineral or sulphur water. Often there are many feet of soil covering the bedrock. In these areas you have a choice: you can dig or drill for water in the soil, or you can drill through the soil and into the bedrock.

If there is very little water in the bedrock, or it is of poor quality, you will try to find your water in the soil above the rock, or collect surface water in a farm pond. The soil between you and the bedrock varies from place to place. It may be a thick layer or it may be thin. It may be nearly all clay, or all sand, or it may have streaks of sand, gravel and clay. If it is all clay, water will flow very slowly and it may be necessary to dig several large diameter wells. If there are a number of sandy or gravelly layers, the water can flow much more quickly, and fewer, smaller diameter wells will likely be satisfactory. If your soil is very sandy, it may be difficult to keep sand out of your well. Slotted casings, sand points and "surging" for well development may be necessary.

If you must depend on surface water, PFRA water specialists have much information. Eighty per cent of surface water is derived from melting snow that runs off the land in the spring. How much of this is caught and held by dug-outs and dams, can have a definite bearing on farm operations for the year. You should consider every possible opportunity for trapping runoff that is available. Opening road ditches and channels so that water can run into the dug-outs may help. Small dikes and shallow ditches can be used to divert water from the farm shelterbelt to the dug-out. Water from sloughs can be utilized by pumping it into the dug-out. This should be done before the sloughs become stagnant. ✓

The Farm Shop

IN THE HIGHLY mechanized operation of farming today, service, maintenance and repair of the field and farmstead machinery is essential. The center of this activity should be a properly equipped and heated farm shop with enough space to meet the needs of the farm.

A warm and dry shop permits repairs in wet and cold weather when field work is not possible.

J. H. A. Lee, of the Engineering Science Department, OAC, says that the shop doors must be large enough to permit the largest piece of equipment on the farm to be driven in and the shop floor must provide space for the machine, a work area, a good bench and other shop equipment. A solid and level base for jacking heavy equipment is best provided by a concrete floor.

Equipment in the shop will depend upon the farming operation, the services available from commer-

cial shops, and the interest and ability of the farm operator.

You need a good selection of wrenches and other tools for adjustments and part replacement. An anvil, or a heavy piece of steel, is needed for straightening parts and replacing knife sections. An air compressor is useful for cleaning machines, especially combines, and for inflating tires. An oxyacetylene or arc welder is very useful, but you will need some training to get satisfactory results.

A dry chemical type fire extinguisher and a pail of dry sand are minimum fire precautions.

Major overhaul and repair of complex equipment is the job of the specialists, but maintenance and some repair work can be done on the farm. ✓

Worn Valves Cut Tractor Horsepower

ENGINE PERFORMANCE depends on good maintenance. You should follow the recommendations of the manufacturer in the operator's manual. Periodic tune-ups of the ignition and carburetion systems pay off through peak power and fuel economy. Engine valves have an important role in this power and efficiency peak.

Studies on gasoline tractor engines at CDA's experimental farm at Swift Current show that power losses from valves may be as high as 5 h.p. after 300 hours of operation in the field. In most engines studied, the valves were not in an extremely bad condition but had lost some sealing efficiency. These engines had been properly maintained and tuned up during the test period. After the valves were reconditioned, the engines regained most of their original horsepower. Ring condition, even when oil pumping was evident, had relatively little effect on engine power loss, indicating that the oil was doing a good sealing job even with worn rings.

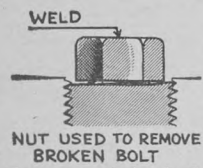
If the maximum power output is down on a well-maintained engine after an average season of use, you could suspect worn valves to be the cause. ✓



Workshop

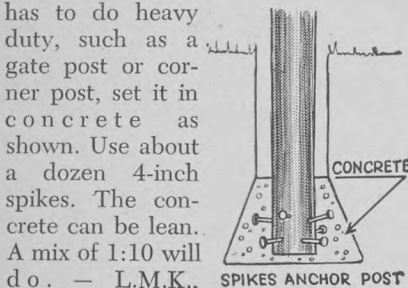
Bolt Remover

If a threaded bolt breaks off in the hole it can be turned out by this method. Weld a nut to the end of the bolt and use a wrench on the nut.—J.W.G., Alta. ✓



Firm Post Setting

Where a post has to do heavy duty, such as a gate post or corner post, set it in concrete as shown. Use about a dozen 4-inch spikes. The concrete can be lean. A mix of 1:10 will do. — L.M.K., Sask. ✓



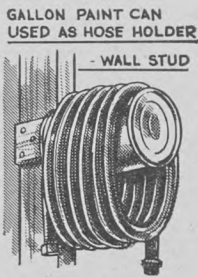
Tap Lubricant

Instead of using oil to lubricate the tap, when tapping threads in metal, especially in non-ferrous metals, use carbon tetrachloride squirted on the tap from a medicine dropper. Oil gums, binds and breaks the tap. Carbon tetrachloride lubricates and then evaporates, leaving no residue.—H.M., Pa. ✓



Hose Hanger

Instead of hanging garden hoses directly on nails or jutting boards, fasten an empty paint pail (1 gal. size works best) over a board. This prevents the hose from bending too sharply.—R.P., Man. ✓



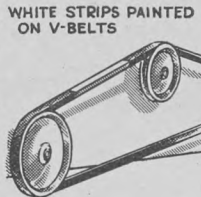
Prevents Rust

Dip a bolt in shellac before putting on the nut. This prevents "freezing" together of nut and bolt due to rust. It also makes later removal easy.—H.J., Pa. ✓



Safety Hint

Paint 4-inch white strips on your combine belts. You will be able to see at a glance if the belt is running and the white strip will also be a warning.—G.H., Man. ✓



Shrink Handle

Burning a broken wooden handle out of an ax or shovel can destroy the temper of the metal. Instead heat it in an oven for several hours and it will shrink enough to be loose.—S.M., P.E.I. ✓



Plastic Funnel

Cut the bottom out of a plastic bottle to make a handy funnel. — J.W.G., Alta. ✓



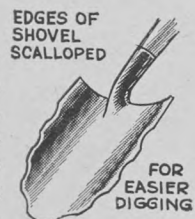
Horseshoe Wrecking Bar

This tool, made from a bar or pipe welded to a horseshoe, is excellent for wrecking jobs in which the lumber is being salvaged. It will reduce damage to the lumber. — J.J.W., Alta. ✓



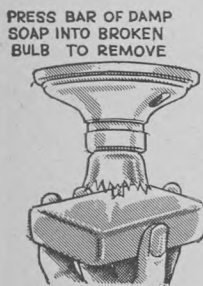
Scalloped Shovel

Hard ground or tough sod is often difficult to dig. Scallop the edges of the shovel so that it will work like a saw.—H.J., Pa. ✓



Bulb Remover

When you want to remove a broken light bulb from the socket, first be sure the electricity is turned off. Then press a bar of damp soap into the broken ends of glass in the bulb and turn it to the left until it comes out of the socket.—R.C.D., Wash. ✓



Oil Dispenser

To make a handy oil dispenser, cut the tip off a ball point pen refill and insert it in a plastic bottle cap. The oil flow can be controlled by pressure on the plastic bottle. Be sure to clean out the refill tube and bottle before using for oil.—G.Y., Alta. ✓



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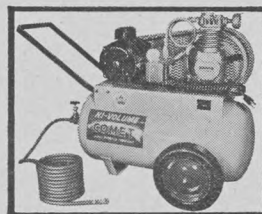
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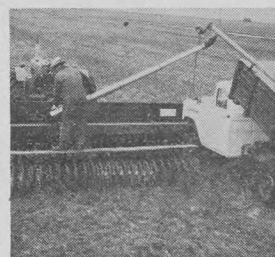


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SASKATOON

Let's chat with John Blakely about galvanized electric weld fabric

The term electric weld fabric may be a fairly new one to you, but it is only recently that people have recognized its versatility around the farm and home. It's a steel mesh with solid permanent electrically welded joints, and is extremely strong as well as self-supporting.

The beauty of this material is that it can be made into almost anything without special equipment to handle it. Some of its natural permanent uses are for making cages for fur ranching, or poultry; for covering dropping pits; even for making trash burners and rose trellises.

Furbearing animal runs and wire kennels



Corn Crib

I've seen it put to use on a temporary basis too. You can make a corn crib or silo any size you need to hold your crop. Individual pens can be made for small animals.

Electric weld fabric uses are practically unlimited, although it is not recommended for line fences because it does not readily adapt to land contours, the solid joints do not allow for expansion and contraction, and it cannot be properly stretched over long distances.

Ask your Stelco dealer about the range of electric weld fabric mesh sizes. There is a size to meet your particular need.

Why not write in and let me know of different and interesting uses you have found for Galvanized electric weld fabric. Address your letters to John Blakely, c/o The Steel Company of Canada, Limited, Hamilton, Ontario.

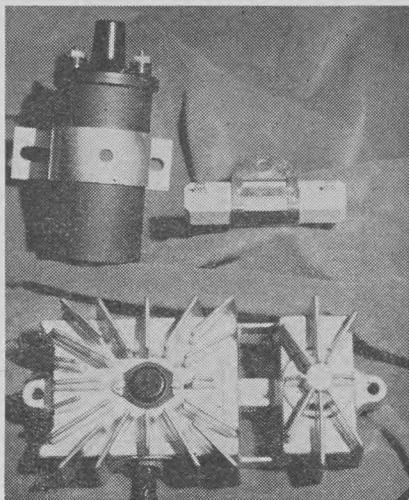


**THE STEEL COMPANY
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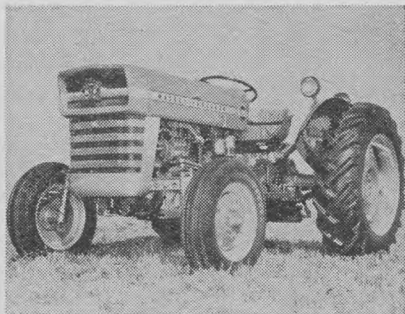
What's New

Transistor Ignition System



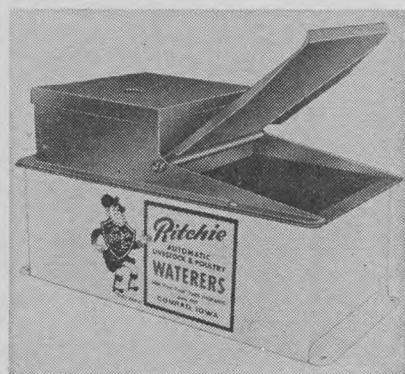
Components of this transistorized ignition system include high output coil, ballast unit and heat dissipator, which contains the transistor. The system is said to offer less ignition tune-ups, marked increase in trouble-free engine life, some added fuel economy and improved cold weather starting. (Studebaker Corp.) (517) ✓

Restyled Tractor



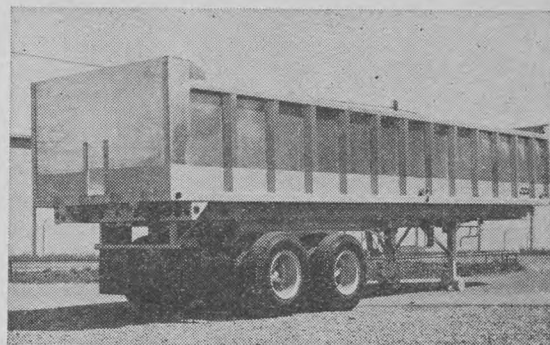
This new line of tractors features new styling. The ignition key and multipower control now have been relocated for easier handling and are less likely to be bumped. It has increased hydraulic capacity and shock-absorbent dual-filament lights set high on the fenders. (Massey-Ferguson) (518) ✓

Single Trough Unit



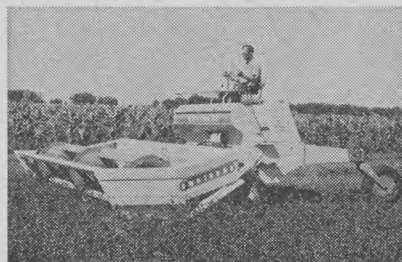
This new non-siphoning water trough, to serve the needs of 40-60 hogs, is also adaptable for use by small animals. It comes with or without thermostatically controlled electric heat. A special feature provides for complete clean-out when the hinged trough is lifted. (Ritchie) (519) ✓

Aluminum Truck Box



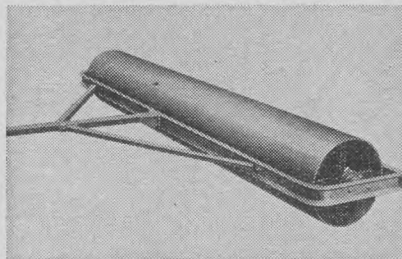
Cattle ranchers and stock growers too, faced with a problem of hauling grain or feed, should take a good look at the leak-proof, hygienic and easy to maintain aluminum boxes. It is reported that in many instances the initial costs of aluminum bodies have been paid for in less than a year of service by the extra quantity of grain that can be carried through the use of rugged but light aluminum. This truck box of 1/8-inch thick aluminum weighs about 2,500 lb. (Aluminum Company of Canada, Limited) (520) ✓

Auger Head Windrower



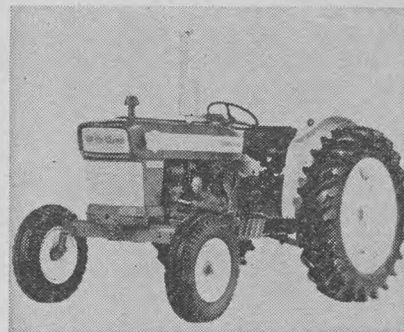
The new tapered auger on this unit is designed to produce an even feed-through of crop material to the hay conditioner. The taper design is to assure complete conditioning action and produce a uniform windrow. (Owatonna) (521) ✓

Smooth Roll Pulverizer



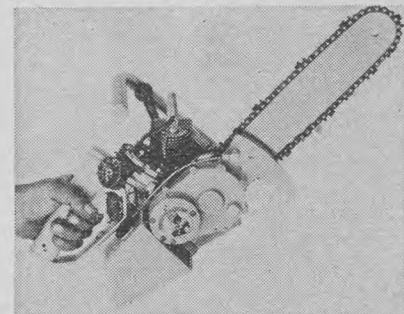
This heavy-duty smooth roll pulverizer is especially designed for seedbeds in stony soil. The semi-steel cast iron wheels, 21 inches in diameter and 6 inches wide, weigh 60 lb. A 4-inch pipe axle carries the wheels on heavy steel stub shafts running in triple-sealed, lifetime lubricated bearings. (Brillion) (522) ✓

Redesigned Tractor



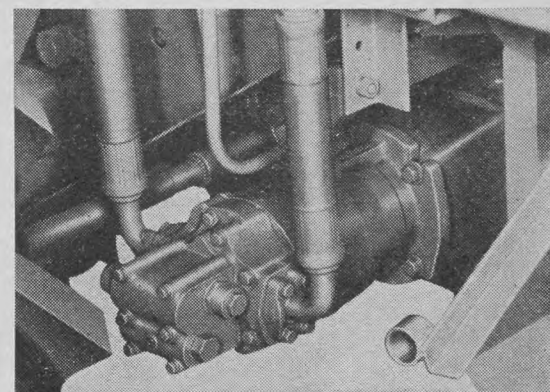
Distinctive styling and longer service intervals are some features offered in this tractor. The battery is designed to swing out and hydraulic capacities have been increased. The manufacturer offers 55 optional lines including differential lock and power-assist steering. (Ford) (523) ✓

Chain Saw



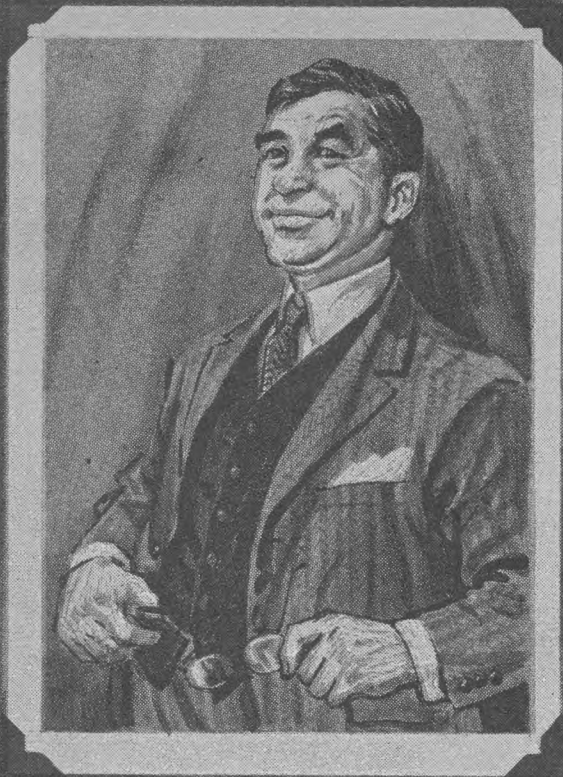
The design of this chain saw is said to provide perfect balance for single-handed use. The saw weighs 9 3/4 lb. (United Distributing) (524) ✓

Hydraulic Combine



This hydraulic motor, driven by a hydraulic pump powered by the combine engine, drives the transmission of the combine. This drive system is said to permit the operator to select the exact speed required for the threshing condition. Speed is determined by a speed control lever and the hydraulic drive system is designed to maintain that speed by changing hydraulic pressure. (John Deere) (525) ✓

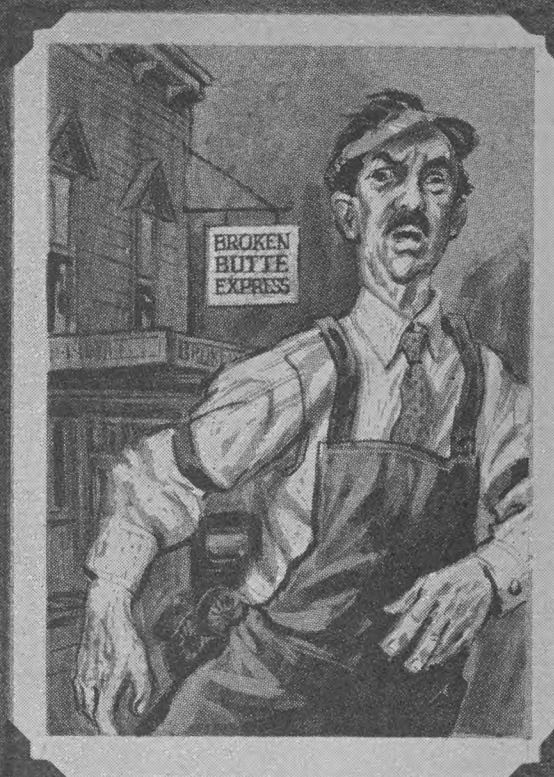
For further information about any item mentioned in "What's New," write to WHAT'S NEW, Country Guide, 1760 Ellice Ave., Winnipeg 21, Man.



UNCLE PAT'S writings put people in two camps—those who swore by him and those who swore at him



"STORE" SMITH'S anger at Uncle's writings made him shake when Uncle Pat came into the store



THE EDITOR finally gave up under the endless strain of Uncle Pat's demands for freedom of the press

Such bombastic personalities as my Uncle Pat sometimes blind us to the real heroes like my father who carry all the daily burdens and ask nothing in return

forever too late

by JOHN PATRICK GILLESE

UNCLE PAT'S FUNERAL, back in the tail end of the Big Depression, was a mile long.

"Aren't you glad now," my mother said to my father, "that we got him a decent casket?"

I can only guess what my father's thoughts were, losing his one brother (even if the two were as different as day and night) and saddled with the extra expense of a funeral when Colleen and I were ready for the "higher schooling" he always vowed we'd have.

He looked back at the funeral procession turning out to pay mass homage to a man everyone automatically loved, and he just shook his head. My father was the sort of man who insisted on going to funerals so that, when the day came for him, there'd be at least enough people to get his casket to its final resting place.

Uncle Pat, of course, came over from Ireland with us — just in time to become familiar with Bennett buggies, 20-cent wheat, dust and depression. He farmed the old Billy Sims' place, straight across the road from ours.

It might be better to say that my father farmed both places and Uncle Pat held what he himself termed "a proprietary interest" in the Sims' land. While Dad disced and walked after the harrows mile upon dusty mile, Uncle Pat battled creditors, drove to town for repairs, and rallied us all around the meal table.

Don't get me wrong. Dad didn't resent Uncle Pat. If anything, he envied him.

As for Colleen and me, we thought the sun rose and set on him. Uncle Pat would take us out at night to watch the falling stars over the black flatlands of southern Alberta. He would show us a freckle-feathered prairie chicken sitting on a dozen eggs in the sparse shade of a scrub poplar.

Colleen would ask Uncle Pat how it was he knew so many wonderful things. Uncle Pat told

us that, in truth, he was descended from a long line of Irish saints, scholars and kings. He warned Colleen, however, not to mention this in front of her mother — who had known Uncle Pat back in Ireland before she met, and married, my father.

There was always a sort of friction between Mother and Uncle Pat — especially when she heard Uncle Pat "windjamming" — filling our heads with nonsense, she called it. This was sort of seasonal. The old Sims' cabin was so thin that Uncle Pat generally moved into the house with us around Christmas, and out again when the crows were coming back from the south. Uncle Pat would watch his talk the first week or two; but, as the blizzards deepened over the flatlands around Broken Butte, the inherited arts of the storyteller got the better of Uncle Pat.

"Did I ever tell you kids the shot I used to be?" he'd ask, for instance, on the evenings when I'd talk to Colleen about getting a .22 some day. "I had to mix the buckshot with the salt, so the birds would still be preserved when I got to them."

I usually saw through Uncle Pat's stories. What made Mother mad was that Colleen accepted them as gospel.

One year when we got a pup for Christmas, Uncle Pat volunteered to teach us how to train him. Naturally, he had to tell us about an Irish water spaniel he used to have.

"It was devoted to me, me darlin's. But it had one fault. It was always pickin' fights with a big Russian wolfhound."

Colleen's eyes were big. "Did it get hurt, Uncle Pat?"

"Ah, 'tis the tender-hearted one y'arel!" Uncle Pat put Colleen on his knee. "One day, me dar-

lin's, the wolfhound killed it. I thought so much of the little dog, I skinned it and wore its hide as a shirt next me heart. And do y'know what, me darlin's? Every time I'd see that wolfhound, I could feel the hair rising on my chest."

Seemed to me that Dad never had time to take us fishing. The machinery was always breaking down. He was always tired, the horses were always tired. It was Uncle Pat who would put aside the letters he was forever writing to the papers. If we needed a hand at building a house in the clump of trees that stood north of Old Sims', Uncle Pat would come out and help.

It's no exaggeration to say we kids worshiped him. Uncle Pat could make the best whistles and fillet a fish faster than anyone I ever knew. He used to show us a little clay pipe — which he was going to leave to Colleen when he died. He claimed he found it in a stone "ditch" in Ireland and assured us it was made by the Wee Folk themselves. In the summer months, when there was so much work to do, my mother would get so mad at Uncle Pat she would forbid us to even cross the road to the Sims' place. This so saddened the three of us that, when the despair grew even grimmer than the disillusioning depression, Mother's anger would cool. She would invite Uncle Pat over for Sunday dinner — the signal we could continue as of old again.

At a critical stage in all our lives, Uncle Pat got his chance at fame.

A SMALL NEWSPAPER was established at Broken Butte. The publisher — who lived in the East — had a chain of them. The inside pages were "ready-print"; the outside composed of the usual "local news." The *Broken Butte Express*, like all others in the chain, had its editor, business manager, and a writer who knew "local color" — our Uncle Pat. (Please turn overleaf)

Illustrated by EMILE LALIBERTE

DAYS DRAGGING?



Life's so short, it's a shame when each day seems filled with more and more irritation and frustration. It may be fatigue due to a rundown condition and, if so, Dr. Chase Nerve Food could help. This time-tested remedy provides beneficial iron and other essential ingredients which help improve your blood and restore your feeling of general well-being. So, if life is passing you by, give Dr. Chase Nerve Food a chance to help you.



HELPS FIGHT FATIGUE

Uncle Pat had two columns—one on politics; the other on this, that and everything—and a fanatical following. Uncle Pat did magnificently when he left politics alone—which was rarely.

Nor did he disguise the nature of the evil and the names of its victims.

One night, for example, I told around the supper table how Buddy Wyler still hadn't got the textbooks he needed for his Grade Nine schooling. Mr. Wyler was an alcoholic. The next edition of the *Express* featured Uncle Pat at his fighting best.

Is it not a terrible indictment of our evil economic system to see before our very eyes a distraught father driven to drink, his children going to school without even the textbooks to study from . . .

Not everyone, by any means, saw it Uncle Pat's way. The ink was scarcely dry on that when I had to

go into "Store" Smith's after school to see if I could get Dad a few plugs of smoking tobacco—on time. "Store" Smith—as distinguished from Reg Smith, who was only another farmer—was a Scotsman who had fought in the Boer War and whose politics were almost as violent as Uncle Pat's. Every time, in fact, that Uncle Pat came into the store, his hand got so shaky that his wife would hurry over and order him to get a sack of flour for a customer, while she looked after the front end of the store.

When I came in after school, he was weighing out ten pounds of dried beans. His hand got so shaky, beans spilled all over the counter and behind it.

"If they wur'n't so busy drinking away their mon-n-ney, they could buy their child-r-r-en books and pay their stor-r-r-e debts as well."

Even though Mrs. Smith kept tugging at his arm he informed me that there would be no more "cr-r-r-edit" until the back bill was paid. When I told my folks what had happened, Father just looked stricken. My mother was wild.

"You did this!" she shrieked at Uncle Pat. In vain did Uncle Pat plead for freedom of the press. "Who better than the Irish should know the price of freedom?" he orated. "Who better should be prepared to pay it than those who know its worth?"

"Haven't y'got freedom here already?" Mother threw at him—a truth so patently profound that, for once, Uncle Pat was speechless.

His next column began with a reminder that "eternal vigilance is the price of liberty," and was followed by a damning castigation of people so soulless that, rather than tolerate a democratic difference of opinion, they would deny the pioneer farmers of Broken Butte the comfort of a pipeful of tobacco.

The editor finally gave up under the strain. One day he ran out on Broken Butte's main street, an ink-stained apron on, his hair dishevelled and his eyes wild. Uncle Pat sent a wire to the publisher—something to the effect that these times called for men of stern mettle and strong heart. The publisher, who was fascinated by Uncle Pat's column on the Wee Folk, asked if he could fill that post also.

Under the editorial stirrings of Uncle Pat, the populace of Broken Butte divided into two camps—those who swore by him and the lesser group, by far, who swore at him.

Unfortunately for the *Broken Butte Express*, the latter were the men like Store Smith, the social elite (like the station agent's wife) and the politicians.

UNCLE PAT'S faithful followers were the kids and the poor people, the farmers without smoking tobacco, the old-age pensioners. People came in to get their subscriptions "on time"—and left by borrowing a couple of dollars. Kids, whose parents wouldn't take the paper, begged a copy so they could read about the Wee Folk. Uncle Pat would tease the young couples—whose usual luxury was restricted to holding hands in the post office lobby, while they waited for the mail to be sorted. "You were

young oncel!" Uncle Pat would plead, on the front page of the *Express*. "You didn't want to sit home, listening to Aberhart broadcasting about poverty in the midst of plenty. Give our young people something to do, somewhere to go—so that at least they retain their sense of dignity as individual human beings . . ."

If this had been written by someone far away, the people there might have appreciated it more. Unhappily, even the farmers would refer to Uncle Pat as "that old windjammer." They figured that it was easy for a person who didn't have to make a living fighting both the dry winds and the depression.

"Disappointment and setbacks are only spurs to the strong of heart," Uncle Pat told us—or, perhaps, himself. He was getting slightly overweight, and he wheezed when he had to hurry. I think he sensed that time was running out for him—in more ways than one.

One day, the business manager quit. He just walked out of the job and became the grain elevator agent. He couldn't take the expiry list any longer.

At about the same time, the paper companies clamped down on Uncle Pat. So did the foundry men who furnished the metal. The owner of the printing presses sued the publisher for back rent. The publisher, alarmed now, hastened west. With him, he had another editor—a lanky, underfed fellow from Toronto.

"Pat," the publisher said, "you may be a genius, but papers have to pay their way."

"I, sir," Uncle Pat told him, "am but one man, with but a single pen—which, sir, I assure you, has proven mightier than the sword. Despite the sanctions of the moneychangers, if necessary I could collect every cent owing to this paper . . ."

Right then and there the publisher made Uncle Pat the paper's business manager.

It wasn't the demotion that caused Uncle Pat to slip in the estimation of his niece and his nephew. In the sensitive, tween-age world, we were almost ashamed of our former idol. Uncle Pat knew it well. There was a smiling strangeness on his face when we met. When Mother asked him about a political speech he had attended, and he said it reminded him of a Texas longhorn—a point here, a point there, and a lot of bull in between—the worn joke fell flatly on our tired ears.

That fall, Uncle Pat took us out to watch the shooting stars for the



"Talk about government regulation!"



Need anything in this line?

If a new truck or tractor—or both—would lighten your workload and increase your farm's efficiency, your Bank of Montreal manager is a good man to see.

For purchases that mean profits, a B of M Farm Improvement Loan is often the best means of getting the required equipment working for you in short order. If your proposition is sound, there's money for you at the B of M for any type of farm equipment . . . at low cost and on terms suited to your income.

So why not put that new truck, disc harrow or side rake to work soon—see your nearest B of M branch today!



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last time. They fell in a blazing arc, burning out before they hit the jungle-black of the land. Far away, lamps winked in the same soft blackness.

Uncle Pat's voice came softly.

"You've grown up," he said. "Y'think you know more now than we who are old; an' it's not for me to confuse you."

Colleen spoke—almost as if she was a little girl again.

"People are so mean to you, Uncle Pat, that I — I could cry."

Uncle Pat's broad hand reached out.

"Don't be cryin', me darlin'. Be wonderin'. Wonder how it is that if I speak out for a boy without the books to study from at school, people should somehow be ashamed of me."

For the first time his voice sounded very tired, very old.

"The thing y'have to learn now," he added, after a moment, "is relative values. Which is sweeter—to see the sun set on a salty western isle—the home of your fathers and of all your dreams . . ." he was gazing at Colleen's bowed head . . . "or to follow to a foreign land to be near a child you love—though she be not your own?"

Maybe, in that moment, I began to understand what relative values are. Or maybe it was just the incredible bewitchment of Uncle Pat's tongue again. Anyhow, I was glad of the starlight, for suddenly my eyes were full of tears.

THEY WAITED for Uncle Pat's final failure—the socially elite, that he wouldn't "write up" in his days as editor . . . the businessmen, whom he had scourged for their lack of heart . . . the politicians whose campaign promises he had ridiculed.

Evenings after school, I'd find Uncle Pat worrying over the account books. It was an effort now for him to tell his tall tales and tease the kids in love. For all that, he encouraged me to write little items of the district and its people—to get the smell of printer's ink into my veins.

"Could be," he said one evening, "that the boys like you are the ones who will do the job. It's a world to try men's souls that's coming. But if you have the laughter and the warm heart, it'll help. And God knows, the world will need it."

For Colleen, he had similar words of faith.

"People forsake the poor, because they think the poor have neither loyalty nor power. Well, I shall show them they are wrong, me darlin'."

He went out with an old Ford, remodeled, with a wooden box, to serve as a virtual junk truck. He toured the country around Broken Butte, taking old hens, radiators, grain, calves — which he took to town and converted to money. He paid every cent of the back bills on the paper. Then told the startled editor his job was done.

All these years, Dad had been looking after the Billy Sims' place. Uncle Pat declared his avowed intention of fixing the house up, so he could live there all year long—and, for a change, looking after Uncle Pat first. He complained of his heart at supper about a week later.

ONE OF THOSE who came to pay their respects was the publisher of the *Express*. He was tall and distinguished, an elderly man with a clipped gray moustache.

"You know," he said to my mother, "Pat was only one man—but he was always a majority of one. With a little luck, he could have been the prime minister."

Even Buddy Wyler's dad shuffled by.

"I got kinda mad at him for the personal things he printed about me," Old Man Wyler said. "Just the same, he always fought for us fellas."

They spoke to my mother, of course. Dad wasn't much at meeting folks. Besides, he had the "arrangements" to attend to.

On the evening before the funeral, when the last unknown visitor had paid his respects, my mother took Colleen and me into the front parlor. Her face was strained, as if she didn't know whether she should tell us or not.

"Your Uncle Pat asked me to marry him once—just before I met your father. Your father was practical and industrious, but your Uncle Pat was—Pat was only a dreamer."

Mom started to cry a little. Something inside my heart seemed to break loose, too, and suddenly I was just a little boy again, tramping through the sunlit grasses, holding Uncle Pat's hand, worshiping him. Colleen was swinging on his other arm. And the poorest years of all our lives were turned to the richest of all.

The ceremony at the graveside was over.

In prairie places, even the family mourners made their own way home. My father started to get the team to take us back to the farm, while the neighbors stood in little groups outside the cemetery, still talking. Colleen had wept, but Uncle Pat was the sort of person you did not mourn with tears.

I had been watching my dad while the casket was being lowered to its prairie resting place. It's funny how you can go on living for a long time in the same house with people and scarcely see them. That's how it had been with my dad.

It's funny, too, how death can suddenly make relative values clear. All I could think of, while the casket was being lowered, was: Who would have looked after Uncle Pat if there hadn't been my dad? Who would have given him the chance to "speak fearlessly"?

In my heart, I knew there would always be a warm memory of Uncle Pat. But what about dads who work day after dreary day—too tired to tell you about fairies—too stooped from their labors to show you shooting stars? Without them, would you, too, have gone to school without textbooks?

Were the real heroes of the world men like Uncle Pat—or men like my father . . . men who love your mother enough not merely to romanticize with her, but to provide for her . . . who carry everybody, even the Uncle Pats of the world, and ask absolutely nothing in return?

I cut way from Colleen and Mother, hurrying down the cinder

path that ran from the west end of the cemetery to the wide metal gates.

"Dad! Dad —" The tears were pouring down my face, and I didn't care.

My dad stopped, in surprise, almost as if he didn't believe his own ears. He turned and saw me running. He caught me, his arm around my shoulder.

"Don't take it too hard, son—"

He didn't understand.

"Dad, it's you! I loved Uncle Pat—but I just never realized till now how much I owe to you. . . ."

It tumbled out in a torrent of words, while people stayed back respectfully. And my father led me through the gate toward the team.

"I could never begrudge the enjoyment Pat got from you kids — you know that," he said. "I had everything — the love of a good woman, a wonderful son and daughter." He slapped me roughly on the back. "Don't worry about the work I had to do, son. The worthwhile things take a lot out of you—sometimes they almost take the heart out of you—"

It was getting hard for my father to finish what he had to say. He managed a bit of a smile.

"But you know, son? In a single minute, life can make it all worthwhile."

I guess that's what some men never learn. Or if they do, it's forever too late. V

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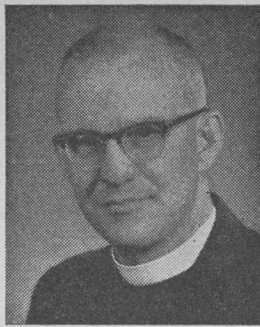
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Let's Think It Over

by THE VERY REV. M. L. GOODMAN



It's All in What You're Used To!

I heard of two city children who went to visit their grandparents on the farm. Grandma couldn't get them to drink milk until she resorted to the stratagem of letting them discover it in bottles on the doorstep!

You and I are accustomed to the miracle of seeds and earth; but, suppose, up to now, we had lived in some artificial environment away from all knowledge of growing things. Then, suppose someone showed us the bare brown earth and a handful of seeds and said, "From this will come your food!"

There are many other things which look equally unpromising in this life. Right at this moment there are men and women who stand in despair before situations which seem hopeless. Yet God has given us a handful of seed to plant even in this barren ground.

It will bring forth a great harvest if we will plant it. The seed He has given us is *faith* and the willingness to keep trying.

Suggested Scripture: St. Matthew VII, verses 7-11.

No Other Name Under Heaven

"The church must revolutionize itself . . . but it is from the ranks of the so-called heretics that the revolution must surely come if it is to come at all . . . society would find some modern means of crucifying him.

"Ragged, cast out, abandoned, denied, and finally extinguished, he would seem to his contemporaries to have failed miserably in his *obviously vain task*. Yet there would be one or two who, at the moment of his death, *would be moved* to the point that they would commit their lives to his ideals. It is possible to believe that this number might grow into the *Christian Church of the New Age*."

These are words from the last chapter of Pierre Berton's now famous book — *The Comfortable Pew*. The italics are mine.

I was present at the "press conference" in Toronto on January 21 when the book was launched. Nothing I heard then and nothing I have read in the book since has convinced me that Pierre Berton has any conception of what the church really is.

Who has blinded him to the true vision of the Body of Christ? He is partly responsible himself as we all must be for our own attitudes and philosophies; but we of the church must bear at least some of the blame.

Where he should have seen the power of Christ, he has seen us. Where he could have seen the love of God, he has seen our selfishness. Thus he has no vision of a humble but holy fellowship which needs no "new revolutionary" for it is still living by the reality of the absolute victory of the first "revolutionary" who is also the last and only.

The Comfortable Pew should be of interest to every Canadian Christian. We need to weigh carefully every criticism, but we should never suppose that this is all there is to say about the church.

Suggested Scripture: Acts IV, verses 8-12; St. Matthew XVI, verses 13-20.

On Kicking Horses

I knew a man years ago, who once kicked a horse. It was a singularly lazy (and perhaps stupid) animal and he was trying to get it to move over in the stall. It just wouldn't move the way he wanted it to. Finally he became so exasperated that he kicked it. He didn't hurt the horse much, but he broke his own toe.

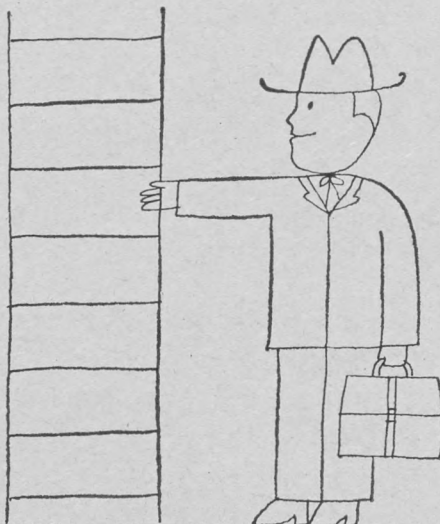
Losing your temper in any situation is pretty much like kicking a horse. (I suppose tractors are even harder on the toes!) The writer of the book of Proverbs says: "He that is soon angry dealeth foolishly," and in another place "He that is slow to anger is better than the mighty; and he that ruleth his own spirit, better than he that taketh a city."

Some of us do have a worse time with our tempers than others. It is harder for us to control our anger; but this is no excuse, and it's no use saying "Oh well, I can't help it if I'm likely to fly off the handle." If we know this much about ourselves, then we should also realize how greatly we need self-discipline.

Instead of kicking horses we can *deliberately* attack our own weaknesses, and, by prayer and practice, seek to overcome them.

Suggested Scripture: St. James Epistle I, verses 19-end.

v



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to hold the
ladder?

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Home and Family



Vertical board and batten in combination with brick make a pleasing exterior for the Clare Brock farm home

[Guide photos

Almost a Dairy Farm . . .

Inadequate insurance cost this family dearly

by ELVA FLETCHER

CLARE BROCK IS a land surveyor by training. He was a dairyman by choice — until fire destroyed the dairy business that he and his wife Ruby had built up on the outskirts of Brandon, Man. Today, a lone yard light is mute monument to the death of a dream.

I met the Brocks last fall when I stopped in to learn something about their farm home, a split level design that features an interesting combination of brick and wood. Over coffee and feathery-textured banana muffins (you'll find the recipe on page 83 of this issue) I learned that the Brocks farm a half section; and they have another quarter section with what Ruby calls a "built-in gravel pit." And, of course, there's Clare's surveying business which he operates from the house.

Clare grew up on a farm near High Bluff, Man. Then the army claimed 3 years of his life. After that he went into surveying. But he couldn't get away from a deep-rooted urge to get into farming. First of all, he tried operating a small dairy at Oak Lake some 30 miles away. That wasn't a satisfactory arrangement. Then he got into another dairy business, this one across the road from the present farm.

The Brocks chose the present farm site for its location: it was suitable for the dairy Clare wanted and it was accessible to those who needed

Clare's surveying services. By the time I'd talked to them, they'd built up a 50-cow herd (75 head if you counted the calves) and they milked about 40 of them. They'd installed bulk handling equipment and put a new addition on the barn. Then they lost the entire dairy enterprise by fire.

They did save the cattle but they lost everything else — the buildings, equipment, feed. Fortunately their home was a safe distance from the buildings.

Ruby and Clare were convinced that their insurance coverage was adequate. They'd even double-checked with their agent on this point. Too late they discovered that the stacks of feed were not covered; neither was last year's addition to the barn. None of the metal work—stalls, stanchions and so on — had been covered, for the reason that the manufacturers' guarantee indicated that the product would withstand fire. From their experience they learned that nothing withstands what Ruby calls "a real honest-to-goodness" fire; and they also learned that the manufacturers would only put things back in working order if they were to rebuild.

In spite of the loss, they had decided to do just that. Then another problem arose. For income tax purposes, they found themselves classed as "hobby farmers" and, (Please turn overleaf)

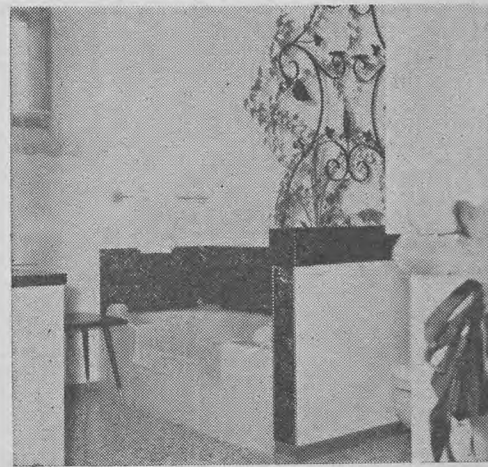
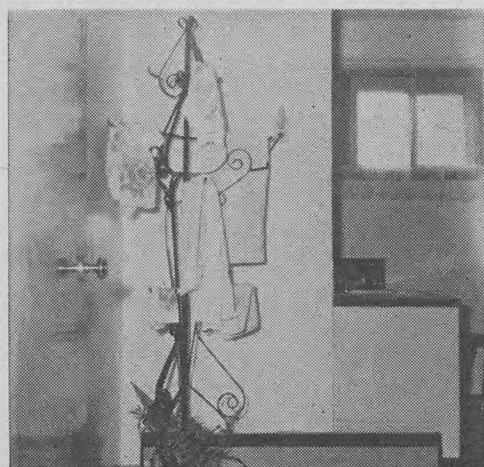


TOP: Brick fireplace in the living room gives the home a comfortable look. BOTTOM: Ground level family room is adjacent to Clare's office



The downstairs play and recreation room belongs to the children. It has a fireplace, an extension of one upstairs

Bathrooms can be beautiful. The pink decor in this one in the Brock home contrasts pleasingly with black wrought iron ornamentation, one serving as a trellis (r.) for Ruby's bathroom garden, the other as a towel rack (l.). Portable baseboard heater gives extra warmth



as such, allowed only a minimum business loss. As Ruby points out, "this would scarcely cover salaries, to say nothing of feed, dairy replacements and the various expenses that crop up every month on a dairy farm." For the Brocks, it would have meant that, for the first year or two, income taxes would have exceeded income. Because they had been putting everything back into the dairy business, they had no cash reserves and were forced to sell their cattle.

At this point Ruby says, "I wish some of those 9 to 5'ers had been around at 4:15 a.m. when Clare got up to start milking by 5:30 or 6:00. And when I hauled two small children to the barn with me at 7:00 a.m. to start washing up, I didn't consider it a hobby."

With the dairy business gone, the Brocks plan to put most of their land into alfalfa, take off one crop and then work up the land for grain.

THE BROCKS BUILT their present home in 1959. It sits back from the Trans-Canada Highway and is sheltered on the west by a long line of tall trees. When they bought the farm this shelterbelt was overgrown. They've cleaned and tilled it "to make it a park-like place." The old house and buildings were razed, the good wood salvaged. Later, it went into the new home.

Clare and Ruby had already decided on the 3-bedroom split level plan. This, of course, necessitated building up the yard area with loads of fill hauled from a nearby ridge. Next came the basement excavation which they did themselves. However, they did hire outside help for the actual building and interior finishing. The result is a bright, spacious home for the Brocks and their two children, Maureen, who went off to school for the first time last September, and David, 5 last February.

Ruby and Clare made a number of decisions before they began building. One was to use inexpensive interior finishes and put the money they saved into an air-conditioning unit. "It cost us about \$800 to put it in," Ruby told me, "but it's one of the best investments we've made."

They also decided to install two water systems. Why? I asked. She explained that today's detergents tend to create problems in septic tank systems. For this reason, one system is designed to drain water from kitchen and laundry areas (where detergents are most frequently used) into a sump with an automatic pump. Detergent-free bathroom wastes, on the other hand, drain into the conventional septic tank and field. It's an excellent arrangement, according to Ruby.

"We still miss the dairying part of our operation," Ruby says. "But the fire did teach us a lesson we'd like to share with other farmers. It's this: insure everything — even the things that are guaranteed to withstand fire. Still, as Ruby points out, even catastrophe brings compensations—in the kindness of neighbors, the offers of facilities and help from dairymen from miles around, some of whom they didn't even know, and now the time to develop the small orchard that's her project for this year. V

Rural Rhymes

Winter's Last Stand

*Beyond this circled, frozen rim,
In distant, sunny vale,
Are soft spring breezes gathering
To end this chilling gale?*

*When March winds blow across
the land
In bitter, whirling sweep,
Be sure of this: at Spring's command
A burdened sky will weep,
And April's silver tears will fall
On every crystal drift
To banish winter's chilling pall
And usher in her Gift!*

*When Arctic king seems loathe
to break
His fierce and mighty grip,
Be sure of this: full soon he'll take
A long and lethal sip
From April's overflowing cup,
And deal a deadly blow,
With each voracious, greedy sup,
To all his frozen snow!*
*Oh, gayly, over frosted rein,
Warm breezes soon will trip,
And put an end to Winter's reign,
With kiss of Springtime's lip!*

—MYRTLE MCINTYRE

Token from the Past

*It lay in a trunk that was rusty and
old
Concealed in an attic for dust to
enfold.
Where memories dwelled of a
century gone
Diminished when life, same as
always moved on.
I found it, caressed it, and
pondered the year;
And marveled the person who made
it appear.
And thought of quick hands and a
lovely frail lilt
That helped stitch together the old
patchwork quilt.*

—INGE LOGENBURG KYLER

Silence

*Here I have stood with lifted eyes
To view the wide and open skies.
Here I have watched the quiet way
Those who work the fields can pray.
I have knelt by a running stream
Drinking deep of a summer dream,
And stopped beside an apple tree
To shake its blossoms down on me.*

*Nearer to God upon this hill
I know now why He said, "Be still."
The quality of silence proves
The wondrous ways in which God
moves.*

—PATRICIA ROBINSON KING



[Miller Services photo]

When the Old Barn Fell

*They tore the old barn down today.
The new one stands just off away;
Aluminum roof and gleaming walls,
Cemented floor and bright new
stalls.*

*The neighbors came from miles
around.
Week after week they heard the
sound
And rhythm of the hammer's ring,
While here I sat, a-wondering.*

*I thought about a bygone day;
A little boy in a loft of hay.
Kittens scrambling up a creaky
door,
A newborn colt, and an old plank
floor.*

*The new barn stands majestic there,
Shining and bright in the fresh
spring air.
The old barn falls! The timbers part!
I feel a rip from within my heart.*

*I had fed the calves in its tiny
stalls,
Helped pack the mud in its old log
walls.
I'd milked the cows by the lantern
light;
I'd bedded them down on a starry
night.*

*I felt its warmth, a cosy glow;
I felt protected, and now I know,
Though the new one is bigger, will
serve to the end,
When the old barn fell, I lost a
friend.*

—JESSIE C. THORSETH

Mood for Thought

*When the last of my flowers were
felled by the frost
And their colorful kingdom was
shattered and lost,
I deplored the rash changes that
nature designed
In the garden I pampered with
backbending grind.*

*Then my garden was suddenly
sculptured in white,
An artistic arrangement by snow in
the night—
For the drifting descent of immacu-
late spills
Had redecked the terrain with their
glittering frills.*

*All the groundlings were covered by
heaps of crisp snow,
While the trees were bejeweled in
their virgin ice glow.
From the picture I pondered, if
winter's white sheen
Had surpassed the sweet essence of
summery green?*

—LENORE GARRETT

Family

*This is the circle of the sun
Whose warmth and light men need
to live;
It is the wheel of seasons, spun
Around the hub of Time, to give
Nature her quiet certainty.
This is the shield made to defend
The heart from utter loneliness,
Without beginning, without end.*

*Look back along the way you came
And you will see this curving line
Leading to antiquity;
Look forward, and the same design
Moves through the darkness of your
doubt
In rainbow colors, clear and strong,
Fit symbol of the family
Of Man, to which all men belong.*

—R. H. GRENVILLE

Two Ways

*Wherever man is born in life,
Two ways are his to grow,
The inward way; the outward way.
No other way to go!
The inward way, he loves himself.
The world, in scope, is slim.
He cannot see beyond his needs
Or what is gain for him.
The outward way, his life is wide,
Each day he finds a friend.
Like widening circles on a pond,
His love can find no end.*

—ALLEN HAWLEY BROWN

Prescription for Living

*Love and know that you are loved
And dream of love anew;
Ponder not on all the ills
Which we are subject to;
Be a guiding light for right
And stand against the wrong—
Never follow blindly in
The customs of the throng;
Seek for beauty all about
And finding just a trace,
Cultivate and watch it grow
Into a garden place!*

—GEO. L. EHRLMAN



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Build a Fence with Boulders

by FRIEDA DEKKER

OUR ROCK FENCE began with a pink and black boulder, oddly shaped, that had lain at the edge of our driveway for years.

We sat on it as we contemplated the lawn and discussed the kind of fence we should build to separate the grass from the rest of the farmyard. A hedge might look untidy during winter months. A picket fence? With farm resources at a low ebb, it would probably have to wait, like so many things, until "next year."

"How about a rock fence?" said my husband, running his hand over the cool pink stone. It wouldn't cost anything for materials. This appealed to us at once! There would be no paint upkeep, no posts to rot. If necessary we could burn weeds around the rocks in the fall. It would be unusual in appearance.

This last thought delayed us for a day or two — we had no wish to have our friends think we were erecting some kind of monument! Then we threw conformity to our prairie winds. After laying out our fence line with small stones to get the curve we wanted, and digging a hole perhaps 6 inches deep, my husband maneuvered the boulder into place with bars, blocks and misgivings. He set it up, tamped dirt firmly around it and our fence was on its way.



Flowers in the 3-foot wide bed take kindly to the protection of our rocky fence. It not only shelters them from wind, it protects them from sun

Although our farm land is fairly level prairie, there were several large boulders that had been dug up and shoved along fence lines after dulling disc and one-way pans for years. We pulled these home with the tractor. Neighbors kindly donated their largest rocks.

We found others along the nearest river and pushed them up a ramp

(a 3 x 12-inch plank) into our pick-up truck. We searched particularly for irregular shapes and interesting colors and textures.

ONCE we had them home we faced the best sides of the rocks toward the driveway and lined them up as evenly as possible. On the uneven side (facing the lawn) we made a 3-foot-wide flower bed. The flowers take kindly to the rocky wall: it affords protection from wind, tends to moderate temperatures (rocks stay warm longer after the sun goes down), gives them shade part of the day and assures tender roots a snow-bank during winter months.

Most of our rocks are at least knee-high, while one stands over 3½ feet above ground and is about 3 feet wide. We feel that the farm shows them to advantage: the background of space and the natural setting complement their massive appearance.

We developed a few "rules" out of our experience. For example, utmost caution is called for at all times — a heavy boulder can crush a leg or foot with ease. Little children should be kept safely out of the way.

Consideration must be given to prevailing winds to prevent snow-drifts from blocking the driveway during the winter.

Large round flat-bottomed rocks are easiest to set up, require less digging in, but are, alas, so very heavy. Long narrow rocks are much easier to get home but more of them had to go underground and they insist on listing to one side during the planting!

The unconformity of shapes suggests that one should plan a fence line in gentle curves rather than try for formal straight lines.

A few things we did not foresee. The rocks make a dandy set of Alps for youngsters to scale, or an authen-

tic backdrop for acting out their favorite western TV show (somewhat to the detriment of the flower bed!).

We have found them convenient ourselves when posing the family for the periodic group snapshots. And stout robins perch there as they survey the farmyard for a summer breakfast.

Best of all, our rock fence changes color when it rains. Dark gray streaks become a shiny wet black; quartz crystals glisten, dull mottled stones turn into lively reds and oranges and browns. Suggestions that we white-wash them have met with somewhat less than approval on our part!

And if the truck and our muscles hold out, well, we may just tackle the other side of the driveway. V

The Sentinel

An ancient oak stands on a lonely hill

Beside the entrance to my father's farm.

Though gnarled and bent by Winter's storms, it still

In bold defiance laughs at every harm

Capricious elements try to impose. It has a valor and a dignity,

A confidence that man too seldom shows

In facing daily his anxiety.

It stands as if a silent, trusty guard Against intruders to the vast domain;

Its quiet mien suggests a sturdy, hard

Resistance to the wind, the sun, the rain.

O lonely sentinel, I've learned from you

To be a bold, defiant watchman, too.

—ROBERT J. CRANFORD

Music of Trees

My rugged trees are giant harps,

Each branch a vibrant string

Plucked by the fingers of four winds

Tuning the trees to sing.

The South wind is a gentle wind,

Strumming a lover's song;

The North wind plucks out deeper tones

To roll the leaves along.

The East wind wakens sun and trees

Reaching for morning skies;

The West wind croons them back to sleep

With dusky lullabies!

—RUSSEL M. BUTTS

Sunrise Reflections

I stand in awe at sunrise—

The bold and blazing sun

Inspires me as it offers

A new day just begun.

It shows me in mere minutes

That daytime hours should be

All filled with glowing colors

Reflecting what I see.

And if I am unfailing—

Have met my day aright,

An even greater sunset

Will usher in the night.

—EVA N. EHRLMAN



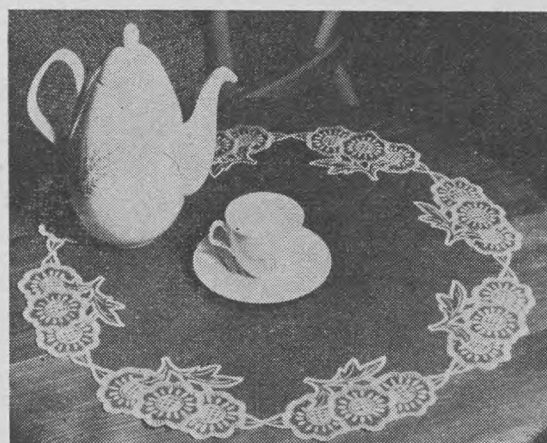
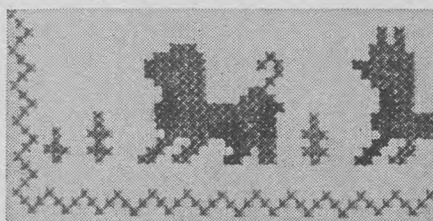
In their winter wardrobe the silent stones become bejeweled sentinels



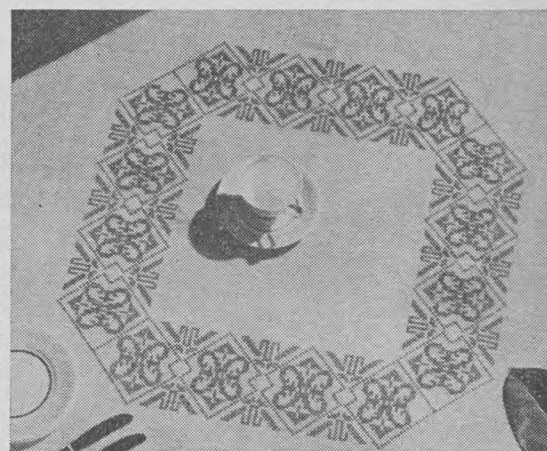
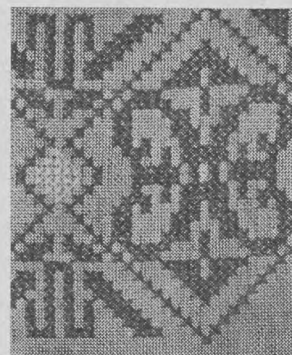
The rock fence is a favorite play place for the children. Sometimes it's a mountain range to conquer. At other times it becomes a stage backdrop

Stitchery

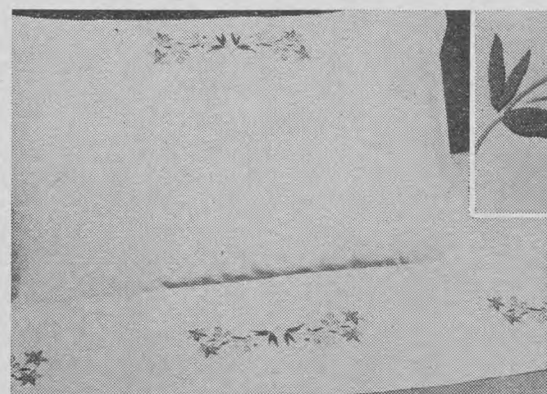
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Order Leaflet No. P.E. 2874, 10¢, for full-size tracing diagram and key to the placing of the stem, button-hole, long and short buttonhole, double daisy, and couching stitches used on this linen mat.



Almond green, amber gold and white are the colors suggested for working the cross stitch design on this tablecloth. Order Leaflet No. E-8793, 10¢, for the color-keyed embroidery diagram and instructions for placing it.



Leaflet No. E-8527, 10¢, provides full-size diagram for tracing and another color-keyed

drawing to show the use of stem, satin, long and short, straight and French knot stitches that are used in the appealing floral motif shown above.

For handicraft patterns pictured above please address your order to Country Guide Needlework Dept., 1760 Ellice Ave., Winnipeg 21, Man.

Spring Goes to Your Head!

Large, lush blossoms in rainbow hues crown a spirit-lifting spring bonnet you can make yourself! Pale pastel chiffons — coral, maize, mint, pink, lilac, orchid and porcelain blue — bloom upon a brimmed buckram frame covered in soft lotus-blossom yellow chiffon. Each blossom is buttoned to the brim, permitting you to exchange your rainbow

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Guide editor Elva Fletcher photographed Ruby Brock and son David. He's a muffin fan too

[Guide photo]

Ruby Brock's Banana Muffins

I LIKE MUFFINS. And I especially enjoyed Ruby Brock's banana muffins. She explained that the original recipe called for sour milk. However, she found that she got a better product with buttermilk. After one bite, I asked if she would share her recipe with Country Guide readers. She agreed and here it is:

Banana Muffins

2 c. sifted all-purpose flour
½ tsp. salt
1 tsp. baking powder
1 c. mashed banana
½ c. buttermilk
1 tsp. lemon flavoring
1 tsp. vanilla
1 tsp. baking soda
2 eggs, separated
¼ tsp. salt
½ c. shortening
1½ c. sugar

Preheat oven to 375°F. (moderately hot). Grease muffin tins.

Sift measured all-purpose flour with ½ teaspoon salt and the baking powder. Stir flavorings into measured buttermilk, then add baking soda. Beat egg whites with ¼ teaspoon salt; then beat yolks in separate bowl.

Now, cream shortening thoroughly. Cream in sugar. Add beaten egg yolks and blend well. Add sifted dry ingredients alternately with buttermilk mixture. Stir in mashed banana. Fold in beaten egg whites. Spoon batter into prepared muffin tins, filling cups ¾ full. Bake about 20 minutes. Yields about 3 dozen muffins.

Ruby offers one word of warning: do not overmix. Muffin makers know the results of overmixing — toughness and tunnels.—E.F. ✓



Mr. and Mrs. Kos built their ranch-style retirement home to face the sunset

The back garden, like the front, is lovingly landscaped and planted with care

A New Beginning

by GWEN LESLIE

Home Editor



Mat Kos smiles a welcome. The planter at right, faced with marble, is a feature of back entrance

AFTER YEARS of being busy, first in farming the land and then in greenhouse flower cultivation on one portion of his farm near Leamington, Ont., Mat Kos found retirement dull. He tried it for 2 years after turning over the family farm and original 2-acres-under-glass greenhouse operation to his son in 1961.

Mr. and Mrs. Kos had prepared for retirement by building a new home on another portion of the farm. Rooms at the front of the sprawling ranch-style bungalow look across a sweep of landscaped lawn to the highway. The front door is on that side at the end of a graceful curve of sidewalk. But from her experience Mrs. Kos felt the back door entrance deserved feature treatment because it would draw the most traffic.

Mrs. Kos found fault with the back entrances in many of the model homes they visited before building. So often, narrow and poorly lighted basement stairs led abruptly down just inside the back door. It isn't that way in the Kos home.

From the back garden with its brick retaining wall and barbecue corner you step through the back door to a broad landing. There you make your choice: six wide terrazzo steps down to the fully finished basement, or six equally wide steps up to the living level. There's a handsome railing of stainless steel to ease the upward climb to the gracious greeting of a marble-faced planter. The marble facing, tawney red-brown on the sides and black on the top, was applied over a cement form.

Mrs. Kos favors earthy tones in the beige-to-brown range. Her use of these throughout their home draws the eye easily from room to room. For instance, the beige vinyl tile in the central corridor extends into the kitchen and adjoining dining area. It gives way to carpeting of a rosy-beige cinnamon shade on floors of the TV room, living room and front entrance hall. Walls and furnishings repeat the earthy tones. In the kitchen, even the refrigerator is brown! The pleasing emphasis on these natural tones throughout the spacious three-bedroom bungalow creates a unifying theme.

The same colors appear again in the rooms finished in the basement. At the foot of the steps leading down from the back entrance is a long clothes closet of wood where out-of-season cloth-



Two years after retiring from 8 years of growing flowers in the original greenhouses, Mr. and Mrs. Kos began again — with vegetables under glass

ing is stored. This closet is lined with cedar, as are all the bedroom clothes closets. To the right of this, a doorway opens into a large recreation room, approximately 24 ft. square. The floor surface is virtually indestructible terrazzo. Turning to the left, another doorway leads into the utility room that's become a second kitchen. Mrs. Kos makes kitchen use of it in the heat of summer, and when they use the recreation room for entertaining.

The utility room is bright by day with sunlight from two generous windows. Mrs. Kos wanted big windows in the basement and the brightness of this room is a point in favor of her argument. The basement is shallower than standard depth to obtain this light. To retain the low look of a ranch-style bungalow, the earth was graded up to the front of the house where there are no windows into the basement.

The new home might not have been quite so spacious if Mr. and Mrs. Kos had known how short a time they would have their daughter at home with them. She was married during their second year in it.

After the wedding, Mr. and Mrs. Kos set off on a 12-week, 14,000-mile motor trip that took



Back entrance features ornamental railings of stainless steel, gleaming ceramic tile and terrazzo

them as far south as Mexico and home via British Columbia. They took time along the way to visit other folks' greenhouses. By the time they reached home, they felt their retirement had been premature.

The first load of wood for a new greenhouse was delivered in September 1963. By January, Mr. and Mrs. Kos had their first crop in. They were back in the greenhouse business, with an acre under glass. First they planted cucumbers, picked these for 6 months, and when they were done tomatoes took their place. They planted one house to carnations, for old times' sake. "We couldn't get away from flowers completely," Mrs. Kos admitted. However, the carnations gave way to cucumbers when it was time again for these, because vegetables require less labor.

Mrs. Kos is happy to be back in the greenhouse with her husband. "I've always worked out in the greenhouses," she told me, "and I do now too." Both are pleased to have made their new beginning, even to a new farm dog who learned early to call them from the greenhouse when callers stop at the house.



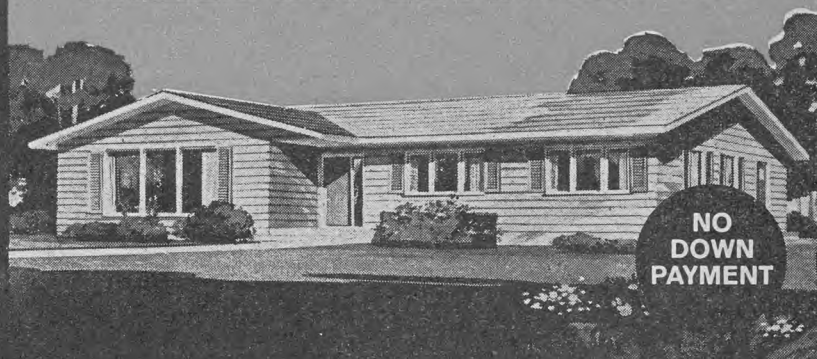
One arm of U-shaped kitchen cupboards separates work center and eating area

Storage space and kitchen equipment are co-ordinated along one wall facing the open end of U-shaped unit. Cabinets are faced with wipe-clean plastic laminate in one of the brown tones Mrs. Kos favors



Double sinks set in counter wall beside washer and dryer were installed for laundry. A stove and refrigerator make this basement utility room a second kitchen

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Eggs for Easter

by GWEN LESLIE
Food Editor

WE HAVE TWO kinds of eggs in mind as we approach the Easter season. The first is a fun-full kind—fun to make and to decorate, fun to hide and hunt, and a real pleasure to eat. In this category we include recipes for Bonbon Easter Eggs which feature fondant-wrapped centers of peanut butter coconut candy or chocolate candy. One recipe of fondant makes enough to wrap one candy filling. If you make both candy fillings, half of each will be left over—a problem the family will be happy to help you solve! For the adventuresome, we include a recipe for Easter egg nests of the spun sugar so popular during summer fair season.

Popcorn Easter Baskets may be made ahead for filling with Easter treasure. To keep fresh for Easter morning, just wrap the finished baskets in transparent plastic film.

Chocolate Dipped Eggs is our final recipe offering in the taste-tempting fun category.

Brightly decorated Bonbon Easter Eggs nestle in a melt-in-your-mouth nest of spun sugar candy

The second group of our eggs for Easter recipes suggests opportunities to work Lenten mealtime magic with the familiar product of our poultry industry. Eggs are in good supply and offer exceptional value for your food dollar this Easter.

Bonbon Easter Eggs

- 1 recipe No-cook Fondant
- 1 recipe Peanut Butter Coconut Candy and/or
- 1 recipe Chocolate Candy
- Icing Sugar Icing

Prepare fondant. Divide in three equal portions and knead a drop or two of food coloring into each portion, using a different color for each. Chill mixture until ready to form eggs.

Prepare candy filling. Cut batch into 36 small pieces and shape each into a ball. Chill.

Cut each of the three portions of fondant into 12 pieces. Flatten each piece to ¼" thickness with hands. Wrap around chilled candy centers. Form into an egg shape. Decorate with icing piped through a decorating tube or squeezed through a cone made of heavy brown paper. Yields 36 small decorated eggs.

No-Cook Fondant

- ⅓ c. butter
- ⅓ c. light corn syrup
- 1 tsp. vanilla
- ½ tsp. salt
- 1 lb. icing sugar, sifted
- Food coloring

Cream butter; blend in corn syrup, vanilla and salt. Add icing sugar all at once. Mix together, first with spoon, then by kneading. Turn fondant out on pastry board and continue kneading until well blended and smooth.

Peanut Butter Candy

- ¼ c. creamy or chunk-style peanut butter
- ¼ c. corn syrup
- 2 tsp. water
- 1½ c. sifted icing sugar
- 3 T. skim milk powder
- ¼ tsp. salt
- 1 c. flaked coconut

Blend peanut butter and corn syrup. Stir in water. Combine icing sugar, skim milk powder and salt. Stir into syrup mixture. Add coconut. Knead until thoroughly blended.

Chocolate Candy

- 1 T. butter
- ¼ c. corn syrup
- 1 oz. unsweetened chocolate, melted
- ½ tsp. vanilla
- 1½ c. sifted icing sugar
- ½ c. skim milk powder

Blend butter and corn syrup. Stir in chocolate and vanilla. Combine icing sugar and skim milk powder. Gradually add to syrup mixture. Stir, then knead until thoroughly blended.

Icing Sugar Icing

- ½ c. butter or margarine
- ½ lb. icing sugar, sifted
- Food coloring
- Water

Combine butter or margarine and icing sugar, beating until smooth. Press through a decorating tube to make desired shapes. Flowers, leaves, etc., may be shaped several weeks ahead, wrapped in plastic wrap and stored in refrigerator or freezer. If frosting be-



[Canada Starch Co. Ltd. photo]



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comes too stiff, blend in a few drops of water.

Spun Sugar

- 1/3 c. water
- 1/4 c. light corn syrup
- 1 c. sugar

Combine water, corn syrup and sugar in small saucepan. Bring to boil over medium heat, stirring constantly. Boil, without stirring, until temperature reaches 310°F. on a candy thermometer, or until a small amount dropped into very cold water separates into threads which are hard and brittle. Remove from heat.

Meanwhile, grease handles of two wooden spoons. Tape (plastic tape) spoons to table top 12 inches apart, with handles extending over edge of table. To protect the floor, spread newspapers under the spoon handles to cover an area several feet wide. As soon as the syrup mixture is ready, dip a fork (preferably 6-prong) into mixture. Shake rapidly back and forth over greased spoon handles (for finer strands shake fork more rapidly), dipping fork and shaking until desired amount of spun sugar accumulates. Remove strands from handles carefully. Repeat until all syrup mixture is used, working quickly. Shape spun sugar as desired into nests, etc. Use the same day, because spun sugar melts upon standing at room temperature.

Popcorn Easter Baskets

- 1 c. sugar
- 1/2 c. corn syrup
- 1/3 c. water
- 1/4 c. butter or margarine
- 1 tsp. salt
- 2 qt. warm popped popcorn
- Pipe cleaners
- Shredded coconut, tinted green (or shredded green cellophane)
- Jelly beans or tiny Easter eggs
- Small ribbon bows, optional

Brush outside surfaces of 5 custard cups or other small baking dishes with melted butter or margarine.

Combine sugar, corn syrup, water, butter or margarine and salt in a saucepan. Cook slowly to 264°F. on candy thermometer. Place popcorn in a buttered mixing bowl. Stirring popcorn briskly with a greased wooden spoon, quickly pour a fine stream of syrup over corn and stir just until popcorn is uniformly coated with syrup.

Press a layer of popcorn mixture evenly over the outside bottom and sides of buttered custard cups to shape in baskets. Allow to cool and remove from cups. Bend pipe cleaners and insert one in each popcorn basket to form a handle. Fill baskets with tinted coconut or green cellophane and top with jelly beans or Easter eggs. Trim with a bow, if desired. Yields 5 baskets.

NOTE: To tint coconut, place measured shredded coconut in a clean, dry jar. Add a few drops of green food coloring, cover jar and shake vigorously. Repeat until coconut is the desired shade of green. Spread on a paper towel to dry.

Chocolate-Dipped Eggs

- 1/4 lb. butter
- 3 lb. icing sugar, sifted
- 1 can sweetened condensed milk
- 1 T. corn syrup

Soften the butter, mix in the icing sugar, milk and corn syrup. Divide this mixture into separate bowls and add different flavorings to each bowl. Some suggestions: maple with chopped nuts; chocolate; plain vanilla; vanilla with chopped cherries. Shape mixture into eggs by hand and place them on waxed paper. The mixture is rich, so keep eggs

small. This mixture should yield about 20 eggs.

- 1 lb. (16 squares) semi-sweet chocolate
- 2 oz. paraffin wax (1/2 of one of the four slabs in a 1 lb. package)

Melt chocolate and paraffin together in the top of a double boiler. Dip the eggs into melted chocolate and then put them back on the waxed paper for chocolate to set. Next prepare the decorative icing.

- 1 lb. icing sugar, sifted
- 1/2 tsp. cream of tartar
- 3 small egg whites or 2 large, unbeaten

Mix icing sugar and cream of tartar together, then beat mixture into egg whites. Beat well. Divide mixture into as many bowls as you wish colors of icing. Tint as desired. Using a cake decorating kit, (or you can simply make cones out of heavy brown paper) decorate the chocolate dipped eggs according to taste and talent.

Pie Pan Cheese Omelet

- 6 slices pasteurized process sharp cheese
- 4 eggs
- 1/2 c. milk
- 1/4 c. sliced pitted ripe olives
- 1/4 c. chopped pimiento
- 1/4 tsp. salt

Preheat oven to 350°F. (moderate). Butter bottom of 9" pie plate.

Separate cheese slices, cut in quarters, and arrange pieces on bottom of buttered pie plate. Beat eggs slightly and combine with remaining ingredients. Pour the egg mixture over cheese pieces and bake for 25 minutes or until a table knife inserted into the custard mixture comes out clean. Cut in pie-shaped pieces and serve hot. Yields 4 servings.

Stuffed Egg Casserole

- 9 eggs, hard-cooked
- 1/4 c. butter
- 1/4 c. finely chopped onion
- 10-oz. can mushroom pieces, finely chopped
- 1 T. catsup
- 3/4 tsp. salt
- 1/4 tsp. pepper
- 1 T. finely minced parsley
- 12-oz. pkg. frozen peas or 20-oz. can
- 5 T. butter
- 5 T. flour
- 3/4 tsp. salt
- 1/2 c. mushroom liquid
- 2 c. milk
- 1 1/4 c. shredded medium cheddar cheese
- 1/4 c. fine dry bread crumbs
- 1/4 c. shredded cheese

Preheat oven to 375°F. (moderately hot). Grease a shallow 12" by 7 1/2" baking pan. Cut eggs in half lengthwise. Slip yolks out into a mixing bowl without damaging white. Melt 4 tablespoons butter in frying pan; add onion and mushrooms and brown lightly. Stir into mashed egg yolk, along with catsup, salt, pepper and parsley. Mix well, then refill egg white halves with yolk mixture.

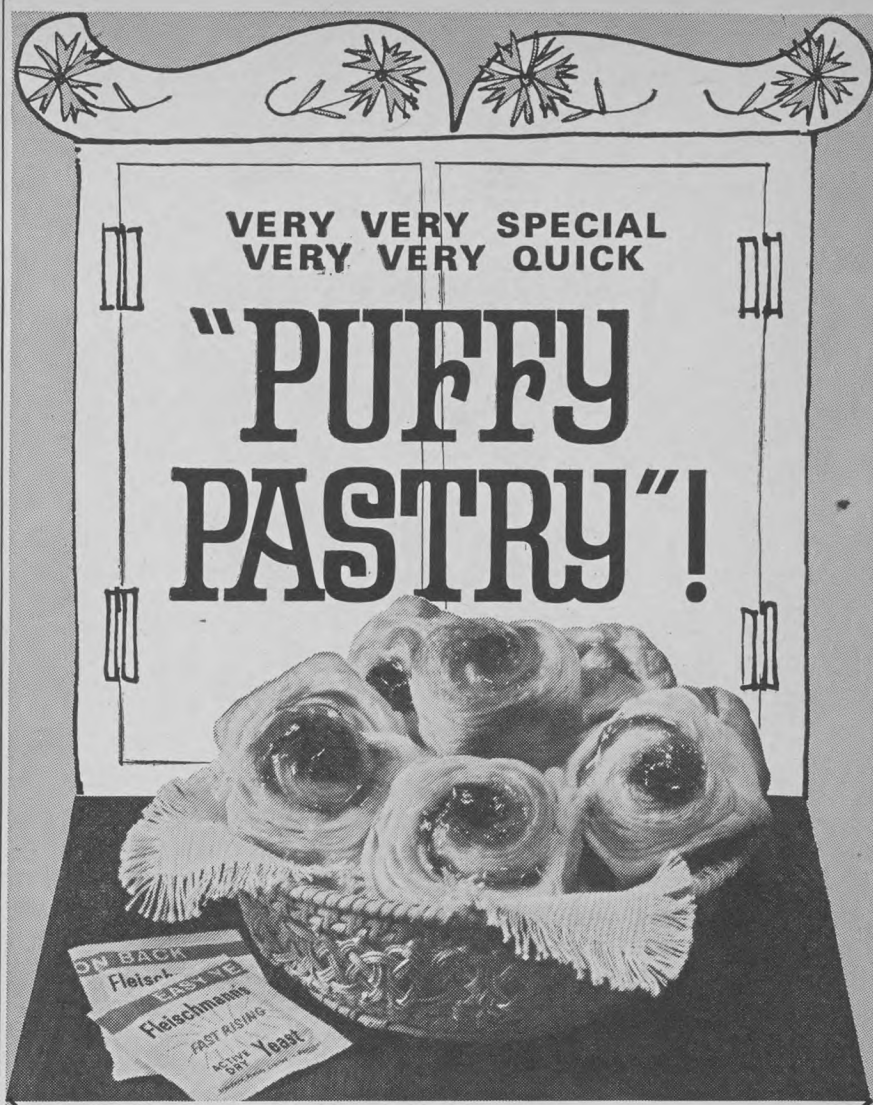
Cook frozen peas in a small amount of boiling salted water; drain. (If using canned peas, simply drain liquid from peas in can.) Spoon peas evenly over bottom of prepared baking dish. Arrange stuffed egg halves firmly in peas.

Melt remaining 5 tablespoons butter in a small saucepan. Add flour and salt and blend well. Cook over low heat until bubbly. Blend in mushroom liquid and milk and stir and cook until sauce

★ ★ ★

Key to Abbreviations

tsp.—teaspoon	oz.—ounce
T.—tablespoon	lb.—pound
c.—cup	pt.—pint
pkg.—package	qt.—quart



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DANISH PINWHEELS

Yield: 15 Danish Pastries

1. Scald 3/4 cup milk. Cool to lukewarm. Meantime, measure into bowl 1/2 cup lukewarm water. Stir in 2 teaspoons granulated sugar. Sprinkle with contents of 2 envelopes Fleischmann's Fast Rising Dry Yeast. Let stand 10 minutes. Then stir well.

2. Stir in lukewarm milk, 1/3 cup granulated sugar, 1 teaspoon salt, 1 well-beaten egg, 2 cups pre-sifted all purpose flour. Beat until smooth. Mix in additional flour (about 1 1/4 cups) to make a soft dough.

3. Turn out dough onto a floured board (1/2 cup flour), form into ball, flatten and dust with 1/4 cup flour. Roll out to a 12 x 18-inch rectangle. Slice one cup very cold butter thinly over 1/3 of rolled dough. Fold dough in thirds to measure 4 x 6-inches, 9 layers thick. Brush off excess flour. Repeat this rolling and folding once.

4. Wrap dough in wax paper; refrigerate 1/2 hour. Roll out dough 1/4-inch thick. Cut in 15 strips about 1/4-inch wide. Roll up jelly roll fashion; place a cut-side-up in

a greased 9 x 13-inch baking pan. Drop a teaspoonful of raspberry or other thick jam in center of each pinwheel.

5. Let rise, covered, in a warm place, free from draft, for about one hour. Bake in preheated moderately hot oven (375°F) for 25 to 30 minutes.

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If you served
your family hot,
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this morning —
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is smooth and thickened. Add $\frac{1}{4}$ cups cheese and stir until melted. Pour cheese sauce over top of eggs and peas. Mix bread crumbs and remaining cheese and sprinkle over top. Bake until thoroughly heated through, about 20 to 25 minutes. Yields 6 servings.

Savory Poached Eggs

- 1 T. butter
- 1 T. minced dried onion
- 1 T. flour
- $\frac{1}{2}$ c. water
- 3-4 whole cloves
- 2 bay leaves
- 2 T. vinegar
- $\frac{1}{4}$ tsp. salt
- 1 T. sugar
- 6 eggs

Melt butter in a saucepan, add onion and cook slowly. Do not brown. Add flour and brown slightly. Add water, cloves and bay leaves and cook until smooth, stirring constantly. Simmer 5 minutes longer. Strain through a coarse sieve. Add vinegar, salt and sugar and heat to boiling. Add eggs one at a time, breaking each into a saucer and then slipping it into the boiling liquid. Cover and cook a few minutes until eggs are of the desired consistency (they may be cooked hard or soft as preferred).

Tuna-Lemon Souffle

- $\frac{1}{4}$ c. butter
- $\frac{1}{4}$ c. flour
- $\frac{1}{4}$ tsp. salt
- $\frac{1}{2}$ tsp. nutmeg
- $\frac{1}{8}$ tsp. pepper
- 4 eggs, separated
- Two 7-oz. cans tuna
- 1 tsp. grated lemon rind
- 2 T. lemon juice
- Paprika

Melt butter in saucepan; blend in flour, salt, nutmeg and pepper. Cook over low heat for 2 minutes, stirring often. Remove from heat and gradually blend in milk. Cook, stirring constantly, until sauce is smoothly thickened and comes to a boil. Remove from heat.

Preheat oven to 325°F. (moderately warm).

Drain and flake tuna; add to sauce and stir in lemon rind and juice.

Beat egg whites until stiff but not dry; add to tuna mixture and fold together until egg whites are about the size of marbles.

Turn mixture into an ungreased 8-cup casserole and sprinkle with paprika. To keep souffle high, cut a strip of foil about 2" wide and long enough to go around the casserole. Wrap foil strip around top of dish and fasten with tape or a paper clip. Bake souffle in a pan of water until set, about 1 hour. Serve at once. Yields about 8 servings.

Lemon Bavarian

- 1 T. unflavored gelatin
- $\frac{1}{4}$ c. cold water
- 3 egg yolks
- $\frac{3}{4}$ c. sugar
- 1 T. grated lemon rind
- $\frac{1}{4}$ to $\frac{1}{2}$ c. lemon juice
- 3 egg whites
- $\frac{1}{4}$ tsp. salt
- $\frac{1}{4}$ c. sugar
- $\frac{1}{2}$ pt. ($1\frac{1}{4}$ c.) whipping cream, whipped

Soften gelatin in cold water 5 minutes, then dissolve over hot water. Combine egg yolks, $\frac{3}{4}$ cup sugar, lemon rind and juice in a large mixing bowl. Place over simmering water and beat with a rotary beater until mixture is thick and creamy, about 10 minutes. Remove from heat and beat in dissolved gelatin. Cool until mixture is just beginning to thicken and become creamy.

Beat egg whites with $\frac{1}{4}$ teaspoon salt until foamy. Gradually beat in $\frac{1}{4}$ cup sugar; continue beating until stiff

but not dry. Fold into gelatin mixture. Fold in stiffly beaten whipped cream. Pour mixture into a 5- to 6-cup serving dish and chill until set. Just before serving, decorate with chopped toasted almonds, maraschino cherries and additional whipped cream, if desired. Yields 6 to 8 servings.

Choco-Almond Angel Cake

- $\frac{1}{3}$ c. sifted pastry flour
- 2 T. cocoa
- $\frac{2}{3}$ c. sugar
- $\frac{1}{8}$ tsp. salt
- $\frac{1}{2}$ tsp. vanilla
- $\frac{2}{3}$ c. egg whites (4 to 5 whites)
- $\frac{1}{2}$ tsp. cream of tartar
- $\frac{1}{2}$ tsp. almond flavoring

Sift pastry flour and cocoa together 5 times. Sift sugar separately. Add salt to egg whites and beat until frothy. Sprinkle cream of tartar over egg whites and beat until moderately stiff. Gradually beat in sugar, a tablespoon at a time, until eggs stand in soft peaks. Add flavorings. Sift flour over egg mixture a little at a time, folding in carefully until all is added. Pour into an ungreased 8 in. tube pan. Bake in a moderate oven at 350°F. for 30 or 40 min. or until top of cake springs back when lightly pressed with finger. Invert pan to cool.

Serve plain or iced, or frosted with whipped cream.

About Freezing Eggs

Dorothy Batcheller, home economics director for Poultry Products Institute of Canada Inc., writes that she has had a number of inquiries about freezing eggs while they are in such good supply at such a low price. This is her advice: To those who want to know if eggs can be frozen right in the shell, we say no, this is not satisfactory. First, the shell tends to crack and secondly, frozen egg yolk becomes gummy if not mixed with salt or sugar. One of these must be added for successful freezing of whole eggs and egg yolks. Egg whites may be frozen separately without adding either sugar or salt.

To prepare eggs for freezing: Break eggs out of shell. For eggs to be used in main course dishes, add half a teaspoon of salt per cup of whole eggs. For use in baking and desserts, add half a tablespoon of sugar per cup of whole eggs. Mix thoroughly with a fork. Package and freeze.

Egg yolks: Break all egg yolks. For egg yolks to be used in mayonnaise, add half a teaspoon of salt to one-quarter cup of yolks. For use in baking and desserts, add one teaspoon sugar per quarter cup of egg yolks. Mix thoroughly with a fork, package and freeze.

Egg whites: No mixing is required, package and freeze.

NOTE: Use frozen food containers such as wax or plastic cartons or glass sealers. Care must be taken with the latter to prevent breakage during storage.

Eggs may be frozen in small quantities freezing 2, 3 or 4 egg yolks, whites or whole eggs in smaller containers. For example: Eggs and whites may be frozen in custard cups then removed from the cups and the frozen blocks stored in moisture-vapor-proof freezer bags.

Frozen individually in this way they are already measured for many recipes.

Another friend has suggested that whole eggs, mixed with the desired salt or sugar, may be poured into the same number of individual ice cube containers as you have eggs. Freeze, then remove from cubes and package the egg squares for freezer storage. They're easy to use and already measured; one square equals one egg!



No. 3425. Five inverted pleats at front, sides and center back lend walking ease to a double-breasted coat dress with away-from-the-neck collar, and $\frac{3}{4}$ sleeves shown or none at all. Misses' sizes 10, 12, 14, 16, 18. Price 85c.

No. 3438. A double-breasted, lined, long-sleeved coat with patch pockets and rolled collar tops its own semi-fitted, short-sleeved dress with a shallow, collarless neckline and side button closing. 10, 12, 14, 16, 18. 85c.

No. 3426. It's the costume look in a one-piece, semi-fitted dress with notched collar, double-breasted bodice, attached bias hip band, circle skirt. May be sleeveless. Junior 9, 11, 13; Misses' 10, 12, 14, 16. Price 75c.

No. 3400. This ensemble of separates combines a back-buttoned, long-sleeved overblouse; eased slim skirt; and sleeveless jacket or sleeveless coat. A self-bow on the overblouse is optional. Sizes 10, 12, 14, 16, 18. 75c.

No. 3436. Another costume combines a semi-fitted jumper (patch pockets) with front-buttoned, long-sleeved blouse and tie at large collar, and semi-fitted, collarless jacket. Order Misses' sizes 10, 12, 14, 16, 18. 75c.

No. 3434. A three-piece suit combines back-buttoned, short-sleeved overblouse with neck bow; semi-fitted open jacket with notched collar; and action skirt featuring four panel pleats. Sizes 10, 12, 14, 16, 18. Price 85c.

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The George Leussink's round house near Sundre, Alta., without exterior finish. Economical to build, it's also easy to heat

That All-Round Look

by D. BURRELL

SOMETIMES BUSY housewives feel they are going in circles. Mrs. George Leussink of Sundre, Alta., does just that for she, her husband and their family live in a completely circular house. A rounder, more comfortable, modern home would be difficult to find.

The circular structure is approximately 55 ft. in diameter, which gives the Leussinks a luxurious 2,200 square feet of floor space for a young, active family of 7 children—4 boys and 3 girls—all of them under 10 years of age. In addition, George's brother Bernard lives with them.

The ample floor space is divided into 12 rooms which include a big central storage and heating room, two entry halls, and one circular center hall. There are five bedrooms; two bathrooms, one with shower, one with bath; a large modern utility room; a playroom; a bright roomy kitchen and a fine big living room.

The rooms are, of course, mostly wedge shaped, with their points flattened to allow for the circular interior hallway. This hallway provides ready access to most of the rooms. It is not a complete circle, for Mr. Leussink thought a part of such a hallway would be wasted space and could end up as a race track for the children. As a result, the hallway ends in a big linen and clothes closet accessible to the bedrooms. Other roomy closets along the length of the hall provide ample closet space and there are additional storage closets for clothing and footwear in both entry halls.

The bedrooms are approximately 11½ ft. by 12 ft. graduated to the wedge shape, the playroom a fine big 13 ft. by 15 ft. The utility room is more pie-shaped than the others to allow for the bathrooms. Even so, the utility room is an ample 14 ft. wide, which allows plenty of room for the automatic washer, dryer, hot water tank, large freezer, and an extra propane stove (in case of power failure). The modern kitchen is approximately 16 ft. by 26 ft. with built-in cupboards on two sides; the living room 16 ft. by 28 ft. Bathrooms are 9 ft. by 8 ft. 6 in.

THE ENTIRE DWELLING is on one level. There is no basement, simply a small, central underground

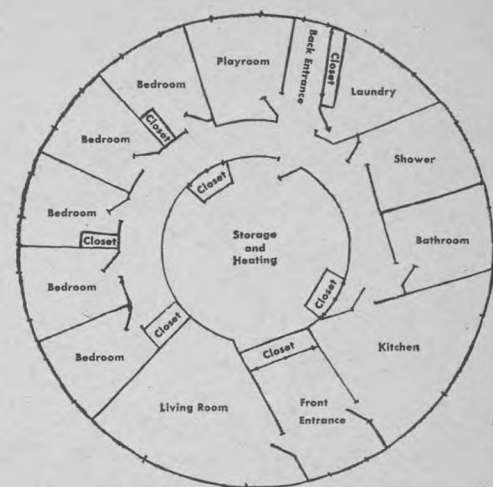
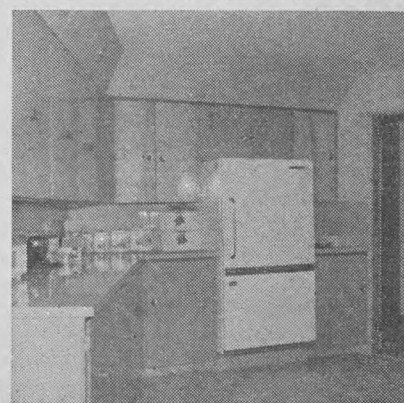
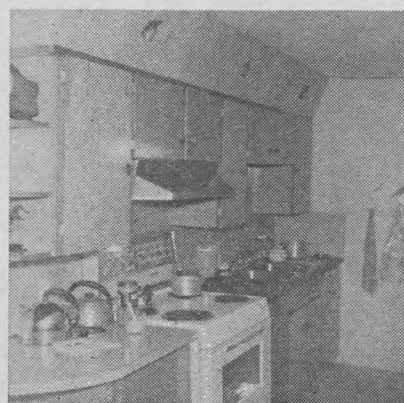
area used to house the propane heating system. Having decided that such a system best suited his family's needs, Mr. Leussink devised it himself. It is a central under-the-floor circular system and the Leussinks find it gives them a warmer floor. The system uses a full forced air propane furnace.

Except for the small dug-out area where the furnace sits, the Leussinks' home sits on a concrete foundation over a full-size concrete pad. Heat flows from the furnace through 6 pipes, each 5 in. wide. They reach 10 feet out from the furnace and head the hot air in the direction of registers between the floor joists. Heat flows freely in the 6-inch space between the floor and cement pad and up through the hot air registers. Returning cold air then travels over the house floor and back to the inside center room where it is forced to the down draft furnace.

Fine big picture windows let lots of light into both the kitchen and living room. There are smaller but equally adequate windows in all other rooms, except, of course, the storage room. The Leussinks finished most of the floors and some walls with cedar wood, a temporary plywood finish that will make an excellent base for the tile and broadloom they hope to have eventually. Kitchen and living room walls are pre-finished wallboard in a variety of shades. The kitchen cupboards are fir.

As yet, the exterior of the house is unfinished and the Leussinks haven't yet decided whether to finish it in siding, stucco or stone.

Two views of the kitchen are shown in the pictures below. It has cupboards on two sides. Large windows make it a bright pleasant place in which to work



George planned and built the house himself, even to the plumbing, heating and wiring. He estimates the cost of the dwelling, including the plumbing, heating, wiring and appliances, at \$5,000. However, this does not include his labor. He does hasten to point out to those who challenge his phenomenally low figure, that he did not use expensive finishing woods. For the framework and exterior he bought good used lumber. After all, he points out, it will be concealed anyway.

The Leussinks came to Canada from Holland. George arrived 13 years ago and his brother Bernard 2 years later.

When asked why he built a round house, George Leussink smiles and explains that he built it because it was the best way he knew of acquiring a sufficiently large, yet very economical dwelling. "Besides," he says, "I've always wanted a round house!"



Four of seven Leussink children fill doorway of the large, bright kitchen



A Quest for Growing—
Looking Toward Marriage

by ETHEL CHAPMAN

"WHEN ONE THINKS in terms of lifelong union, being a good mixer or having looks or style, are somewhat less important than what one thinks about God, money and a crying baby." This observation from James Bossard, in the New York Times Magazine, seems to offer a pretty practical test of fitness for marrying. But how many young people, thinking of someone as a possible wife or husband, have the least idea or even care what the other thinks about God or money or a crying baby. They'll know more about it when they're married.

Perhaps "what one thinks about God" could be taken to mean not only our belief (or the lack of it) in a Creator and Guide of the universe and our sense of personal relationship to Him. It could also mean the standard of ethics we live by — how we measure up in honesty, dependability, unselfishness.

In the social life of our time it is not easy for young people to see each other as they are. The stress is on sports and dancing, being "in the groove," having a "pleasing personality." And because, of all the days of our lives, this is the time when we try hardest to make an impression, appearances can be all the more misleading. It would be simpler if young men and women who meet socially could also see each other in their homes, at their work, in their dealings with people over whom they have some authority. This is not often possible; but it may be of some help to associate in varied interests. A happily married woman told us that at an annual field day for 3 years she saw a certain young man as a crack athlete and didn't think much about him until they worked together on a committee taking a school of handicapped children to the beach for swimming. When she saw his gentleness with the crippled children she lost her heart completely.

FOR OTHER tests of a person to marry: Are you really good friends? Besides being all stirred up emotionally in each other's company, can you relax and feel at peace, secure? Do you always have a good time together, even if you're only addressing your club's circulars or babysitting with a neighbor's children? Do you find a lot to talk about? If it happens that you stimulate each other's thinking, that you can disagree without quarreling, that you find it easy to convey your appreciation of each other, you have something rather special.

What do young people think about money? The management of the family finances is a notorious

cause of marital trouble, but most people seem to find any discussion of money almost embarrassing. A young man looking toward marriage

has to ask himself whether he has the earning power to support a family. A girl has to know something about how to feed a family on a definite budget. A couple contemplating marriage would be wise to decide how their family finances are to be handled. Will the wife be free to do the household buying as she likes, within a certain limit? If she continues working for a while, will her earnings go into the general fund or will they be used for special purposes such as a piece of furniture or a payment on the house? (If two salaries go into the general fund, the young man will be shocked at the cost-of-living when his wife has to stop working and they have only his income to live on.)

Another question is whether in their spending a husband and wife

have the same sense of values—that is, do they want status symbols or things for the actual comfort and good of the family. The management of money might be a live and very practical discussion topic for young people's organizations.

THE FINAL TEST suggested by Dr. Bossard, how we feel about a crying baby, takes us into the whole field of family relations. The question isn't, "How do you feel about a happy baby all smiles and comehitherness?" but, "How do you feel about a child who needs your love and your attention even if you're dead tired and have a dozen other things to do?" The truth is that a lot of young people who marry are too emotionally immature to measure up to their responsibilities here. One
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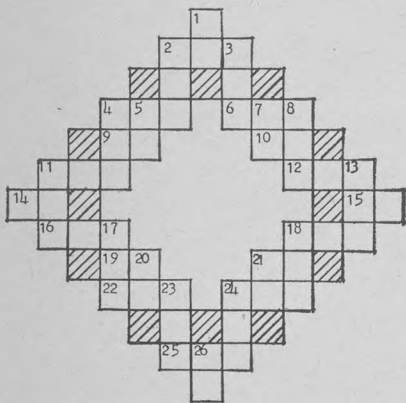
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A Puzzle for You

by JEAN GILCHRIST



ACROSS

2. Farm animal
4. Was sitting
6. At this time
9. We
10. Northeast (abbr.)
11. Fastener
12. Big vehicle
14. Opposite of yes
15. Either
16. Boy's name
18. Pen point
19. Of that thing
21. Myself
22. Kind of fairy
24. Carpenter's tool
25. Walk very fast

DOWN

1. Rhode Island (abbr.)
2. Animal kept for fun
3. Tool for shooting
4. Light in sky
5. Like
7. Opposite of off
8. Spider's home
11. Cooking dish
13. Crying sound
17. Female deer

18. Not old
20. Fluid (abbr.)
21. Mother
23. Not near
24. Male child
26. Not down

Answers

23. Far. 24. Son. 26. Up.
17. Doe. 18. New. 20. Fl. 21. Ma.
7. On. 8. Web. 11. Pot. 13. Sob.
1. R.I. 2. Pet. 3. Gun. 4. Sun. 5. As.
DOWN
22. EH. 24. Saw. 25. Run.
16. Ted. 18. Nib. 19. Of. 21. Me.
N.E. 11. Pin. 12. Bus. 14. No. 15. Or.
2. Pig. 4. Sat. 6. Now. 9. Us. 10.

ACROSS

A Quartet of Trios

by VIRGINIA D. RANDALL

Each of these words may be changed into another word in only three moves. Can you change a peg into a dot? run into sit? sand into dune? war into fun?

PEG	RUN
---	---
---	---
DOT	SIT
SAND	WAR
---	---
---	---
DUNE	FUN

Answers

1. Peg, pet, pot, dot.
2. Run, sun, sin, sit.
3. Sand, sane, Dane, dune.
4. War, far, fur, fun.

Looking Toward Marriage—Cont'd

shocking evidence of this is that last year, in Ontario, 30 children were beaten to death by their parents and 100 more were injured. These are the extreme cases. We wonder how many other children are emotionally damaged for a lifetime by their parents' cruelty or rejection. How we feel about a crying baby is a pretty fair indication of our capacity for love and concern in the whole experience of family life.

Until recently, marriage counselors did not attach much importance to romantic love as a guide to marriage; in fact, they seemed to consider it something of a hazard. Now they are telling us what youth has known all along, that "courtship and mating should be a profound and moving experience," and that "romance is the underpinning of any truly satisfying man-and-woman relationship."

It would be a mistake to settle for anything less; and if you don't find it where you are, you might in

a new environment or new interests with new friends. But to marry because the years are passing, or because all your friends are being married, or for social prestige or any other consideration may be tragically stupid.

Yet there is the danger, as old as humanity, of letting romantic love blind you to reality. It's nothing new to hear a girl say, in effect: "I know he isn't steady; I know he got into this and that trouble; I know he drinks and has a wicked temper; but if I want to marry him it's my own affair." But it isn't entirely her own affair. If she has children she will bring them into a situation where they will suffer what most children suffer whose father is bad-tempered or an unsteady worker or a law-breaker or a drunkard. Perhaps the first consideration in finding a good person to marry, is how you feel about a crying baby.

(Last of a series)

The Unferocious Dragon

by EDITH JANE HARRISON

There once was a dragon whose tail was too short,
Who gave out a snicker instead of a snort,
Whose breath was not fire and brimstone, alas,
It's a wonder the teacher allowed him in class!

He went to a school for young dragons, you see,
Where he learned how ferocious he'd have to be
To go out in the world and be a success,
And to lose all his feelings of timidness.

Poor Rodney was timid, he'd always been so,
For he didn't like water, he didn't like snow.
He couldn't scare people, for people scared him,
And it seemed that he'd never learn vigor and vim!

The first day in school he was scared half to death,
By the other big dragons with fiery breath.
He shuddered and turned pale each time they would
roar,

And wished he could jump up and run out of the door!

Then the teacher said, "Class! It is time to begin!"
And he grinned a stupendous, ferocious grin,
He pointed at Rodney and said, "You'll be first,
Now stand up and scare us and please do your worst!"

Poor Rodney stood up and he shivered and shook,
He could no more scare anyone than he could cook!
But he let out a feeble, half-hearted yell,
That wouldn't have frightened a mouse, he could tell.

How everyone laughed, and the teacher turned red,
While Rodney just stood there and wished he were
dead!

The teacher cried out, "You will stay after four,
And practise until you have learned how to roar!"

The other big dragons roared out fierce and loud,
While Rodney sat low in his seat, with head bowed,
When four o'clock came, there he sat, meek and shy,
And the teacher sat down at his desk with a sigh.

If Rodney did not learn to roar, he would fail,
And the thought made the teacher feel faint and turn
pale,

In all of the years of his teaching he'd never
Had a dragon that failed. No, not once. Not ever!

So he wheedled and shouted and jumped up and down,
Scaring Rodney much more with his terrible frown.
The scales on the back of his neck fairly shook,
And he tried to crouch down behind a big book.

"It's no use," said the teacher, "this dragon can't roar,
But there must be some job that he'd be useful for.
I must have a solution, and have it right now,
Oh my goodness, I must think of something, but how?"

Then two people walked in, it was really quite shocking,
They opened the door and came in without knocking!
"Oh! Excuse us!" they cried, as they backed out the
door,

"We thought this was really a grocery store!"

The teacher turned purple and red and then gray,
"This happens to me every single school day!
Grocery! Post Office! Library! Drug Store!
I simply can't take these mistakes any more!"

He snorted and roared and caused a big riot,
And forgot about Rodney, who sat very quiet,
For he'd just had a wonderful, splendid thought,
About what he could do! He could help quite a lot!

He held up his hand and the teacher just glared,
But Rodney spoke up even though he was scared,
"Please," he said, "I could carry a sign every day,
That says: THIS IS A DRAGON SCHOOL. DO
KEEP AWAY!"

"I never will learn how to roar, for I've tried,
But I might be of some use, if I stayed outside,
The people will see me and think I am fierce!"
The teacher looked startled, and then gave three cheers!

"Delightful!" said teacher, "My goodness, that's it!
As a warning outside you will make quite a hit!"
Now Rodney parades with his sign every day,
That says: THIS IS A DRAGON SCHOOL. DO
KEEP AWAY!

Manitoba Tries Voluntary Teletype for Hogs

by **DON BARON**

Editor

MANITOBA'S hog producers and processors tried out this country's first voluntary teletype hog selling program on February 25 and apparently liked the way it worked.

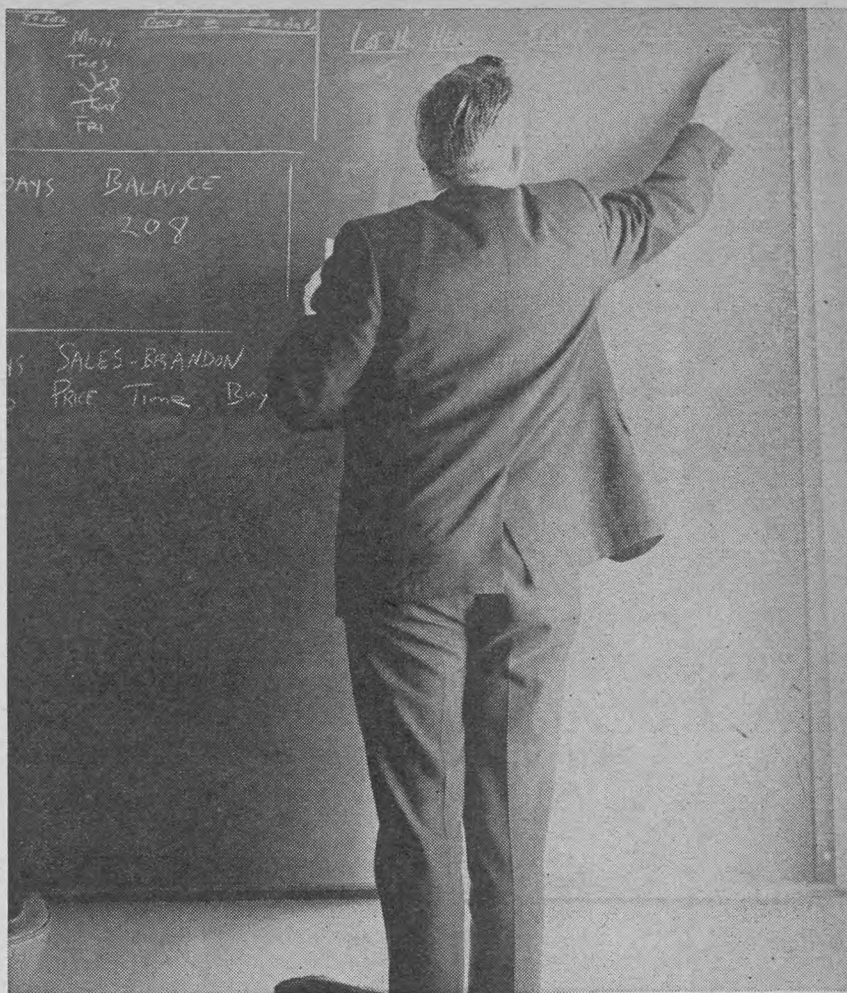
The first hogs were offered over the system on a Thursday, so if problems cropped up, they could be straightened out over the week end. Over 70 per cent of the 2,288 hogs sold those first 2 days went through the teletype. On the following Monday 1,110 hogs, out of the total of 1,849 sold, went through the teletype.

Prices, too, could not have behaved more favorably from the producers' viewpoint. Prices had ranged from \$24 to \$25 during the 3 days prior to the auction. They held firm at \$24.90 on the first day of the auction, moved to \$25.18 on the second day and then on the following Monday bounced up to \$25.63. During the same period, Toronto prices were moving down slightly: \$28.16 on the Wednesday, \$29.08 on the Thursday, \$28.59 on the Friday and then \$27.85 on the Monday. It was indication that the auction was justifying one of its goals which was to be sure that the Winnipeg price is closely related to the price in Toronto.

Hog Commission Manager Bill Munro, who took on the new job November 1, and has developed the selling system now going into effect, allowed himself a hesitant smile at this point, and admitted that things seemed to be starting off well.

Up to that time, he and others involved in the new Commission, had reason to be apprehensive. Hog producers haven't voted on this commission marketing system. It was set up as a calculated gamble by the province's tough and venturesome Minister of Agriculture, George Hutton, on the recommendation of a livestock marketing committee. The committee report, which was handed to him a year ago, pointed to evidence at every hand that most people didn't like the old hog selling system. But there was little consensus as to what they did like. Hutton decided it would be too dangerous to let the hog selling system degenerate further. He decided to devise and implement a new system designed to meet most of the criticism that hog men had voiced, then let hog men vote on it once they had tried it out.

Munro says experience in the first 3 days was gratifying. All 8 packers in the province bought hogs



[Country Calendar photos]

Manager Bill Munro of the Manitoba Hog Marketing Commission marks up on his blackboard the first sale of hogs. The 25 hogs consigned by Searle Farms, East Selkirk, Man., early February 25, sold for 25 cents a pound

through the system. This included the three major packers — Swifts, Burns, and Canada Packers—in addition to the five smaller ones. Eight of the buying buttons are in the offices of these plants, while the ninth is in the office of the Hog Commission where smaller operators can come in and buy when they want to.

Many farmers are obviously prepared to try it out as witnessed by the large number of hogs going through the system.

Truckers too see some benefit in it. Munro told how one trucker stormed into his office the third day of the auction, incensed at the inconvenience of having to patronize the Commission. He had a load of hogs and wanted to get them delivered. Munro offered them on teletype as the trucker watched, and the load was sold in seconds. The trucker gasped, smiled, and went away shaking his head in disbelief. He had suffered practically no inconvenience.

Munro explains that the system can provide the advantages of direct selling but it has the additional benefit of creating an open competitive market as well. Hogs don't need to be unloaded if they arrive at the Commission office at the Winnipeg Stockyards during selling hours which are between 10 a.m. and 2 p.m. They can be offered over the teletype and within minutes the trucker can deliver them to the purchaser.

In striving for efficiency, Munro has tried out "en route" selling as well. If a trucker phones in that he is on his way with a load of hogs, Munro can offer them for sale and then simply direct the trucker to the purchaser when he arrives at

the Commission office. The most common method, of course, is to unload the hogs at the stockyards where the office is located, and sell them during selling hours.

While a hog man doesn't have to sell through the new teletype system, he must pay to support it. Every Manitoba producer must pay 30 cents to the Commission for every market hog he sells. Munro gets records from all packers after each day as to the hogs they bought, and the prices they paid. He tallies the prices along with those from the teletype to get an average price for Manitoba's hogs which he announces each day. By this means, he leaves little incentive for packers to buy their hogs direct. If they pay extra for these hogs, it will push up the average price for the day, almost obliging them to pay more for teletype hogs the next day.

The system provides Manitoba's hog industry with a complete day-to-day running record of hog prices.

The Commission also provides producers with another service. It receives manifests from all packers each day for hogs they bought direct. It checks them over and is in a position to note any errors and look after producers' interests in that way.

Farmers who want to sell direct must first fill out a direct sale form which is available from the Hog Commission office. No trucker can deliver a hog direct if he does not have a direct sale form from the producer.

While Munro manages the new Commission, the Board supervising it consists of representatives of both farmers and meat packing companies.



Looking over the first lot of hogs to be sold by teletype through the Manitoba Hog Marketing Commission are the buyer, Jack Spigelman (left), president of Winnipeg Beef Co., and John Tropak, livestock grader, CDA

Continued from page 23

BULK HANDLING AND BLENDING

The spreader truck is an extra service the Co-op would just as soon do without. But officials feel you must offer all possible services if you want to expand your business. Some local farmers are already talking of getting together and buying their own spreader truck. One customer took measurements on the Co-op machine while it was at his farm and came up with a spreader of his own design the next year. He used an old propane unit for his bulk tank.

The Co-op truck is loaded from the two steel storage bins. While this provides for easy loading, bulk

bins are not considered a good way to store fertilizer. That tremendous load bearing down on the narrow neck at the bottom of the bin tends to compact the material so that it hardens and clogs the neck.

Hoffman thinks they will go back to much the same type of storage they used while the bins were being constructed. They just dumped it onto the concrete floor of a building and augered it into the trucks. The ideal storage unit would be a special building with an insulated concrete floor. Even in areas of high humidity, bulk fertilizer is stored and handled this way.

TREND TO BLENDS

"In a few years most farmers will be using bulk fertilizer," Alf Hammer predicted. "The next trend will be to blends mixed to serve the exact needs of each farmer. This system can be best worked under bulk handling."

To learn about these latest fertilizer trends, Alf Hammer and Bill Hoffman took a tour of six bulk outlets in North Dakota last October. With them went August Liivam and Red McAndrews, president and manager of the Eckville Co-operative Association.

At Drayton, N.D., the Albertans visited agrologist Harold Petersen, manager of the Farmers' Union Center Exchange. This is a wholesale distribution outlet selling exclusively to 23 local co-operatives. The plant is housed in an 80-ft. by 40-ft. arch-rafter building and handles about 2,400 tons of bulk a year. The moisture-proofed concrete floor contains six holding bins for bulk fertilizer. For instance, No. 1 bin might contain 200 tons of 33.5-0-0; No. 2, 200 tons of 18-46-0; and No. 3 bin, 200 tons of 21-0-0. The others might contain 0-46-0 or 0-0-60.

"In its sales approach this co-op doesn't sell fertilizer, it sells pounds

of plant food, tailored to individual order," Bill Hoffman explained. "A customer might ask for a mixture of 2-2-1 (bin numbers), 1-2-1 or a certain amount of N-P-K — just like in a druggist's prescription. The manager looks after the plant during peak periods. The rest of the time you will find him out in some customer's field taking soil samples. These are sent to the University at Fargo. When the soil analysis comes back, the manager will sit down with the farmer and discuss his plant food needs."

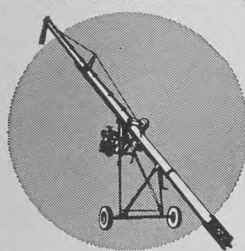
Many prairie soil specialists feel that blending is unnecessary in this country — that we already have good fertilizer mixtures which have been formulated to meet our particular needs. But the Olds Co-operative has enough faith that the trend observed in North Dakota will find its way up here that they plan a

1,000-ton mixing and blending plant which will cater to both "bulk" and "bag" customers. They don't see a complete swingover to bulk use because many of the smaller users here just aren't set up to handle it.

Widespread use of bulk fertilizer will bring other changes too. Railways might have to build special 100-ton aluminum hopper cars because of a corrosion problem with steel equipment. Many bulk installations observed in North Dakota were showing signs of rust, although this can be controlled by sand blasting and coating with rust-resistant paint.

"The way we see it," said Bill Hoffman, "the distributor who has storage capacity so he can deliver when the big rush is on will get the business. If a farmer knows he can get his fertilizer when he wants it, he'll never take the risk of storing it on the farm."

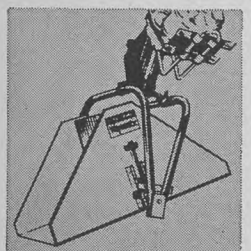
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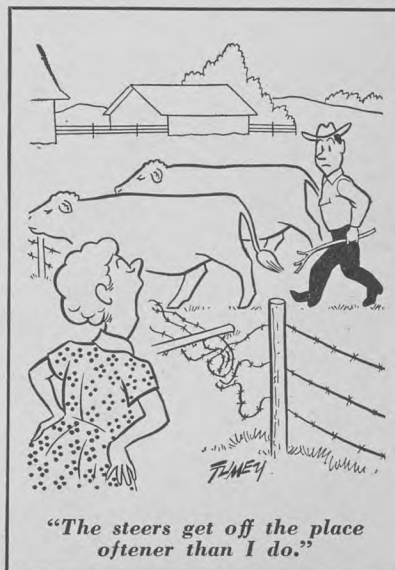
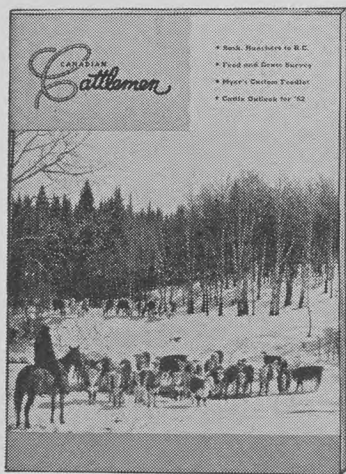
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Continued from page 26

Trade Perspective: WHEAT STILL KING

price of wheat and it helped to create confidence. In mid-February, Czechoslovakia was back in the Canadian market. One of the best pieces of news from the Canadian Wheat Board was the announcement that China would make a 27 million bushel dent in our burdensome durum wheat stock pile. The shrewd Chinese bargaining left no doubt of their awareness that wheat was now a buyers' market. Speculation on the destination of this wheat centered on Albania, China's front runner at the United Nations. The movement of wheat was once again motivated by politics, population and the vagaries of the weather. In part, our wheat sales stem from others' misfortunes; but this should not minimize the several positive factors which have enabled us to participate, once markets opened up.

DON'T CALL IT SURPLUS

We had the wheat to sell, which again emphasized the misuse of the term "surplus." We have the best wheat in the world and an excellent grading system. We are in a preferred position to cater to the most discriminating world markets; we can also supply the Chinese market, which does not demand as high a quality. At the lowest end of the wheat grading scale some low-quality wheat of the 1964 crop moved into feed channels. The severe winter accentuated feed requirements. Had wheat not been available to fill this gap, there could have been a barley shortage.

A number of storm clouds preceded the return to what is now generally conceded as a buyers' market; the world wheat crop in 1964 is estimated at 9 billion bushels, 600 million bushels above the record levels of one year earlier; Australia, while it is not able to compete with us on terms of quality, is sitting on the Chinese doorstep with a 370 million bushel crop; France, the big agricultural producer in Europe and the rock upon which many a negotiation founders, topped 500 million bushels; the U.S. production exceeded 1 billion bushels and we

enjoyed our fourth largest crop in history.

"These increases," says Mitchell Sharp, "taken with the existence of ample stocks in most exporting countries, mean that there will be record supplies of wheat available for export. Import demand in West European markets will be cut by larger harvests in such traditional importing countries as the U.K., West Germany and Italy. While Canadian hard spring wheat has no real equal in terms of quality, the Canadian Wheat Board was forced to bring prices into line with world trends to ensure that the quality premium our wheat commands would not be undermined by too great a spread between our prices and those of medium hard and soft wheat exporting countries."

EXPORTS HIGHER

Wheat prices have now settled at levels very close to those preceding the big sales to Russia; the big difference now is that wheat exports are at a substantially higher level than those existing at that time; the Canadian Government has provided \$500 million in credit; there are trade agreements with the U.S.S.R., Bulgaria and Hungary involving Canadian wheat and there are long-

term wheat agreements with Poland and Czechoslovakia.

The extension of the International Wheat Agreement, for 1 year, is a further stabilizing factor. The International Wheat Council, at the conclusion of its meetings in London last month, "expressed confidence that price adjustment had run its course and that prices would now stabilize at the new levels. The Council reaffirmed unanimously its

belief in the great importance of stable price conditions and its confidence in the International Wheat Agreement as a factor of continuing importance in the achievement of these conditions. "The I.W.A. has the backing of 10 exporting countries and 39 importing countries.

"Despite recent price cuts," concludes Mr. Sharp, "1964-65 will be one of Canada's most successful wheat marketing years. This is no

mean accomplishment keeping in mind the record level of production in the world." Indications are that wheat exports in the next few years will be in the range of 300-400 million bushels; this is a great deal better than it might have been, but a far cry from the 1962 theme of "You grow it, we'll sell it." Western wheat is, and will remain, the really big cog in our agricultural exports. Fortunately, as we enter the buyers'

market in wheat, we have the choice of some alternative crops, such as rapeseed. As A. M. Runciman, president of United Grain Growers Ltd., puts it, "Emphasis should now be on caution in wheat acreage and diversification. Rapeseed lends itself to the large fields of the West. There are expanding export markets and the rapeseed industry in Western Canada could be a pillar of the livestock industry." V



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ROYAL BANK

News Highlights

(Continued from page 18)

cent from 1963. Sales increased in every province except Quebec.

The Alberta Government has approved an ARDA project to study the economic feasibility of a fresh-vegetable industry in Alberta.

The Canada and Alberta departments of agriculture are co-operating in a study aimed at reducing the heavy cattle losses caused each year by calf scours.

Alberta's Deputy Minister of Agriculture since 1955, R. M. Putnam, has retired for reasons of health.

Newly appointed deputy minister of agriculture in Alberta is Dr. E. E. Ballantyne, formerly director of veterinary services.

The support price for sugar beets which, during the past 3 years, has been \$13.72 per standard ton has been raised to \$14.35 for the 1965 sugar beet crop year. Support will again be provided by means of a deficiency payment program.

Dr. Helgi Austman, formerly assistant director of the Extension Service, Manitoba Department of Agriculture, has been named director succeeding D. C. Foster who retires.

Unconfirmed reports from Ottawa suggest that a national dairy board to control marketing of manufactured milk products will be a major plank in the government's policy to aid the dairy industry. It is understood that the provinces will be asked to turn over total responsibility for manufactured milk production to a National Dairy Marketing Board set up by the Federal Government.

Canadian farmers are using more fertilizer. A sales increase in 1963-64

over the previous year of 4½ per cent for mixed fertilizers and a whopping 73 per cent for single material fertilizers was reported by DBS. Because much of the increase was made up of the higher analysis grades of fertilizer the actual increase in plant foods sold was greater than these values indicate.

For the first time, an entire jet plane has been used for a shipment of cattle. The shipment of 55 purebred Holsteins left Toronto in January for Italy.

In its search for a better understanding of what poverty means in Canada, ARDA has signed a contract with the Canadian Welfare Council to carry out studies in depth on life of rural families in four areas of Canada.

Farmers' costs of production between 1949 and 1963 increased by 43.9 per cent, while farm prices dropped 22.8 per cent between 1951 and 1961, the Ontario Farmers' Union has stated in a brief to the Ontario Government.

The research station of the Canada Department of Agriculture at Winnipeg is pressing work to develop an oat variety that is resistant to a new race of stem rust. The new rust race first appeared in the U.S. in 1962, spread in a limited way to Canada in 1963 and became much more common in 1964.

Feeding hogs by hose is said to be spreading in the United States. Finely ground feed is mixed with two or three parts of water and then pumped through a hose with a shut-off nozzle.

Canadian farmers set a new record with their cattle marketings in 1964. Cattle marketings at stockyards and direct to plants totaled 2,857,800 head last year, up 10.4 per cent over 1963 which had been the previous record. The number of hog carcasses graded during 1964 amounted to 7,170,500 head, 10 per cent above the previous year and the highest since 1959.

In an attempt to prevent rabies from spreading into Alberta, the Cabinet of that province has approved a plan to eradicate as many skunks as possible along the Alberta-Saskatchewan border.

Swine breeders in Manitoba who want to place their herds on Record of Performance testing must first start with a home test. This is one of the major revisions made recently by the Manitoba Advisory Committee on the ROP program for swine. Also breeders using the station facilities will be required to go on a home test program if their herd averages fall below 70 per cent for carcass score.

The Manitoba Farm Bureau which was formally organized in January will be primarily a co-ordinating organization of existing agricultural producer groups. Ten of Manitoba's provincial organizations have officially indicated support of the new bureau.

The use of artificial breeding in Canada's cow herd has climbed from 13.8 per cent of all cows bred in 1959 to 17.6 per cent of the cow population herd in 1963.

A swine research grant has been presented to the Animal Science Department of the University of Alberta by the Western Hog Growers Association. The \$750 grant is the first to be made from the WHGA Research Trust Fund established at the 1964 annual meeting with voluntary assessments from members.

Leaders of the National Farmers Organization in U.S.A. are considering plans for another strike against food processors.

For anyone interested in the business principles which should be incorporated into any good leasing or feeding arrangements, the Farm Economics Branch of the Alberta Department of Agriculture has produced a booklet entitled "Alberta Cattle Leasing and Feeding Arrangements."

Winners of the Nuffield Foundation traveling scholarships this year are Donald N. Vicary of Shedden, Ont., and Stanley Olson of Sturgis, Sask. They will make a 6-month study of farm practices and farm life in Great Britain.

In order to boost food exports to Britain, the Ontario Government has set up an overseas food council

committee representing importers, distributors and people in the marketing industry in the United Kingdom. Minister of Agriculture Hon. William A. Stewart says the action has been taken following a study of the overseas food market.

MORE PESTICIDE CASUALTIES

A dairy farmer or stockman who buys feed or forage seldom has any way of knowing what pesticides have been used on the growing crop. But once inspectors have found even a trace of some prohibited chemicals in his product, his sole means of livelihood can be shut down by government order.

This is what happened to two dairy farmers and a feedlot operator at Grand Forks, B.C., about 3 weeks ago when traces of aldrin and dieldrin were found in milk, hogs and beef produced in that area. There is a zero tolerance allowed for these chemicals—that is to say, none must be found. The culprit in this case was cull potatoes bought from local packinghouses and used as feed. Local agricultural authorities say this situation has existed for years, and wonder why Food and Drug has waited so long to act.

There is a growing sympathy for the farmer who has unwittingly bought contaminated feed. In the United States last year, several bills were introduced in the House of Representatives calling for indemnity

Report Challenges Sheepmen



[Guide photo]

If lamb is only a delicacy and wool only a specialty fiber, the sheep industry can hardly thrive

The sheep industry in North America has borne the brunt of many types of competition: beef is the ascendant, prestige meat; poultry producers, and to a lesser extent swine producers, have seized upon new production and marketing techniques; lamb has to compete with New Zealand's cheaply produced product; synthetics have invaded the wearing apparel industry; wool carpetings have many lower priced competitors.

But while the United States sheep numbers hit a record low last year (just half the 1942 tally of 49.3 million head) the output of the single state of Iowa exceeded, by a comfortable margin, the entire Canadian production!

Some results of the decline of the sheep industry in North America have been the lack of research and the dearth of useful advice and information for the farmer with faith in sheep. This gap has now been partly closed with the recent release of "The Future for Sheep."

It is available at \$1.50 (U.S. funds) from the Center for Agricultural and Economic Development, Iowa State University, Ames, Iowa. It is a wide-ranging and detailed report on the sheep industry.

Will lamb become a delicacy and wool a specialty fiber? Does the consumer regard the product of the sheep industry as a luxury and the producer-processor-distributor treat it as a nuisance?

"The Future for Sheep" leaves no lingering illusions; only concerted and sustained industry-wide effort can turn the tide. However, it dispels the hoary myth that a sick sheep is a dead sheep. It offers this challenge to producers. "It is now possible to obtain a 200 per cent lamb crop; to have lambs reach 100 pounds in 90 days; to produce 1 pound of lamb on less than 3 pounds of feed; to have 3 lamb crops in 13½ months and to produce 3 square inches of loin eye on a 50-pound carcass. These have all been accomplished."—P.L.

ACHING BACK?

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payments to dairy farmers whose milk has been barred from the market because of chemical residues. Payments would be made by the Secretary of Agriculture at not less than support prices if the chemicals had been Government registered and approved, and were used according to USDA instructions.

At several American universities, scientists have been working on a "crash" diet for dairy cows which would metabolize these dangerous chemicals in the animals' bodies. The B.C. Government has authorized a pesticide discovery laboratory in Vancouver where farmers can send forage samples for testing to ensure that only residue-free feed will go to their animals.

Pesticide residues are particularly serious to the dairy farmer. Once a pesticide has become lodged in the fat of his herd, the owner might have to dump his milk for a year or more before all trace of the chemical disappears.—C.V.F.

NEW MILK PROCESS FOR B.C.?

A new process, which keeps fluid milk fresh up to 6 months, has been announced by the Express Dairy Company of London, England. Mr. W. E. Bell, managing director of the company, said that an inquiry had already come in from British Columbia.

"I think it's quite possible that we shall be co-operating with our plant manufacturers to install a plant out there in collaboration with the Canadian dairy companies," said Mr. Bell.

"We would not, of course, be competing with Canadian dairy firms. The aim would be the export of milk from Canada to other countries."

Milk that can be kept so long opens up new markets for producers. "There are a number of countries

in southeast Asia and other areas where there are no normal local supplies of liquid milk," said Mr. Bell.

Two plants have been set up to process the milk in England.

The milk is heated to a temperature of just over 100°C. for slightly under 2 seconds. It is then rapidly cooled, and is ready for distribution in the same way as milk processed by conventional methods. It is not expected to be any more expensive than the normal product and tastes the same.

A similar product, sterilized milk concentrate, has considerable commercial potential in domestic and international markets, according to Truman Graf, University of Wisconsin agricultural economist.

Sterilized milk concentrate was developed by the University of Wisconsin department of dairy and food industries. It should not be looked upon as a product that will build up one segment of the dairy industry at the expense of another, Graf stresses. Rather, it should be looked upon as a product which could increase overall milk use, benefiting consumers and producers alike.

Sterilized milk concentrate is manufactured by reducing whole milk to one-third of its original volume by removing water. When the water is replaced, the taste and flavor compares to that of fresh fluid milk. It can also be used in cooking, or as coffee cream without reconstituting. The product keeps, without loss of quality or flavor, for 4 to 6 weeks without refrigeration. Refrigeration increases its keeping ability about four times.

The milk concentrate has important cost and marketing advantages. It is much cheaper to transport than whole fluid milk. Its long shelf life, reduced volume and lower refrigeration

requirements mean savings for the wholesale and retail distributors.

These transportation and distribution savings are reflected in the estimated retail prices. Graf's analysis indicated that retail prices for sterilized milk concentrate would be 6 cents per quart equivalent lower than fresh fluid milk prices in stores.

Graf concludes by saying that the combination of favorable market reaction and price competitiveness suggest a considerable potential for the product in many areas of the world.

FINAL WHEAT PAYMENTS

The Canadian Wheat Board has announced the final payment on wheat delivered to the Board during the crop year 1963-64.

Including 43,425,117 bu. of durum wheat, producers delivered a total of 563,875,208 bu. of wheat to the Board in the 1963-64 crop year. This is the largest volume of wheat ever delivered by producers to the Board in a crop year. The amount of the final payment to be distributed to producers is \$271,964,204. This final payment is a record in the history of Board operations. This is not a payment by the Government of Canada, but represents the net returns to the Canadian Wheat Board in the marketing of Western Canadian wheat for the 1963-64 crop year. Of the total payment, \$18,376,022 will be distributed to producers of durum wheat.

The average final payment for wheat other than durum is 48.725¢ bu., which is also a record. The average final payment for durum wheat is 42.317¢ bu. These average payments compare with 40.181¢ bu. for grades of wheat other than durum and 64.780¢ bu. for durum wheat delivered by producers in the 1962-63 crop year. V

Refuse Wheat Export Subsidies

Only hours after the Canadian Federation of Agriculture demanded, of Prime Minister Pearson and his cabinet, subsidies on wheat exports, Trade and Commerce Minister Mitchell Sharp flew into Winnipeg and in a major wheat policy speech turned thumbs down on the whole idea. Such a proposal, if carried out, would wreck the present very effective wheat selling system in Canada, he implied, for the inevitable result would be to convert the Wheat Board from a producers' marketing agency to a government agency. He said the incentive to sell as much wheat as possible at the best possible prices and to build up markets, would be severely weakened. He said there would be a running battle between the producers and the taxpayers if wheat exports were subsidized and that producers wouldn't always win that battle. Sooner or later, he said, there would be irresistible demands for acreage and production controls. Mr. Sharp stated the best policy for Canada and for Canadian wheat producers is to build upon the sturdy and well-tried foundations of the wheat board system.

Mr. Sharp noted that parliament has not entrusted the sale of wheat to politicians. He said it decided very wisely to establish a permanent, independent wheat board to handle the prairie crop. The role of government and of the minister in charge is to help the Wheat Board in carrying out its functions.

Speaking to the Diploma Agricultural Graduates Association in Winnipeg, Mr. Sharp pointed out that despite recent price declines, Canada's wheat export situation has moved up to new levels from those of a few years ago. He gave the reasons for this as the continued skill of the Wheat Board, the continuing high quality of our wheat, and the efforts of those who handle the grain, as well as the long-term sales negotiated by the Board under the new trade agreements with communist countries, and the credits made available by the government. To illustrate the present high level of wheat income, Mr. Sharp referred to payments made to prairie farmers for their wheat during recent years. In the crop year 1954-55, he said they totaled just under \$400 million. During the next 5 years, they totaled

between \$460 and \$500 million. In 1960-61, they got up to \$546 million then to \$567 million, and to \$720 million in 1962-63. Then in 1963-64, they jumped to almost twice the level of the mid-'50's, \$915 million. He added that in the present crop year total wheat payments will not fall much below this. One reason is that the forthcoming final payment on the 1963 crop will be the largest by far in total amount in the history of the Wheat Board. It will also probably be the largest per bushel final payment.

The situation then is vastly different from that of only a few years ago. As a result, Mr. Sharp said he does not intend to adopt any policies that will interfere with the efficient operation of the producers' marketing agency or reduce the board's incentive to go after markets on behalf of producers.

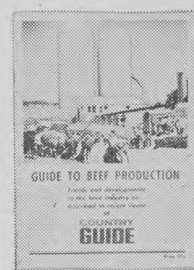
Mr. Sharp also sketched out a few optimistic goals of his government for wheat producers.

The government's objective, he said, is to enable Canadian wheat producers to move the equivalent of 550 million bushels per year during the present and the two succeeding years. This means a goal of 400 million bushels for export and 150 million for domestic use during each year. V

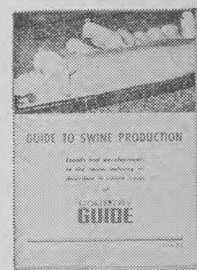
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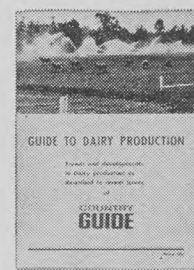
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Rustlers Concern Stock Growers

Maybe you "can't have it both ways," as the saying goes, but there's no harm in asking for it. At their 69th annual convention — held in Medicine Hat, Alta., last month — members of the Western Stock Growers' Association passed one resolution asking that the Federal Government stop building new community pastures under ARDA, and another that it continue to operate the community pasture at the Suffield Defence Research station. The first resolution passed with a narrow majority.

Speaking for the first resolution, Dr. Gordon Burton, Claresholm, Alta., stated that considerable areas were being cleared in the northern part of the prairies at public expense to bring more people into the already-crowded cattle business. "Our problem is overproduction," he said, "we don't want to get into the same fix as the United States

where they have to limit production."

Opposing the resolution, Jack Horner, M.P., Acadia, said, "I hope this resolution will be defeated. It is the duty of the Federal and Provincial governments to develop this country."

With regard to the Suffield pasture, which the Army wants returned, movers of the resolution pointed out that the Government had spent \$100,000 equipping it so that it could carry 5,000 head and serve about 150 ranchers. They asked that it is continued as a pasture as long as there is a demand for it in this area.

Another resolution passed was a request for a specialized branch of the RCMP to work exclusively with the livestock industry to help curb rustlers. As one rancher who had lost cattle explained, "Cattle thieves can kill an animal and have it out of the field in 15 minutes. Most

Mounties are city boys and aren't familiar with this business."

There were resolutions commending the Federal-Provincial ROP program, requesting that the Alberta Government broaden the scope of the wildlife crop damage policy to include cover crops and greenfeed, and asking that free trade in beef and live cattle be established between Canada and the United States.

One resolution which generated considerable heat asked the Alberta Department of Agriculture not to increase its brand inspection fee from 10 cents to 20 cents, suggesting the extra fee would be unnecessary if government men increased their efficiency. An amendment to the resolution stated that if the 10-cent fee didn't cover costs the difference should be made up from Horned Cattle Fund.

Defending his department, Agriculture Minister Harry Strom pointed out that "the province to the east of us has had the 20-cent fee for quite awhile. We are faced with increasing costs. The dime doesn't go as far as it once did."

WSGA secretary Fred Newcombe wanted to know if it was the policy of the department to make these endeavors (inspections) self-supporting. Some ranchers were inclined to look on the fee as just another tax, while others viewed it as a service to the beef industry.

Two resolutions were defeated—one asked for an end to Bang's testing and mature cattle retesting, and the other called for free movement of feed grains between provinces. The mover of the last resolution—a grain farmer—said that farmers want a chance to get rid of their feed grain. A feed company representative estimated range pellets could be \$9 to \$10 cheaper per ton to B.C. ranchers if inter-provincial restrictions were removed. The resolution was defeated because a majority of prairie feeders have no desire to aid competitors in other provinces.

Clarence Copithorne, Cochrane, Alta., succeeded retiring President George Ross. Elected as Vice-Presidents were Frank Gattey, Consort, and Dr. Gordon Burton, Claresholm, Alta. V

Sauve Defines Poverty

Before waging a war on poverty, it is first necessary to define what it is. The man responsible for leading Canada's war on poverty, Honorable Maurice Sauve, Minister of Forestry, who is responsible for ARDA, has suggested some guide lines to use in defining it.

In Mr. Sauve's view, any Canadian suffers from poverty who does not have access to at least the following benefits of modern life:

1. Adequate food and a balanced diet.
2. Decent clothing suitable for all extremes of our Canadian climate.
3. Adequate housing with reliable heating, sound weatherproofing, hot

and cold running water, flush toilets, electricity, refrigerator, one bed for each child with adequate bedding, and adequate household furnishings.

4. Proper medical and dental care including the services of doctors, dentists, surgeons, technicians, and specialists where necessary; hospital care where necessary; whatever drugs and supplies are required, including artificial limbs, dental plates, etc.; and nursing care.

5. General education up to the end of high school followed by access to universities for those who are qualified and want it, and access to technical or vocational training for those who prefer it.

6. Adequate facilities for recreation, information, creative and cultural activities and self-improvement.

7. Access to low-cost public transportation and other means of communication.

8. Access to the dignity and security afforded by a productive job.

Mr. Sauve went on to add that it costs the government a great deal to maintain people in a state of unproductive poverty. He suggested that steps taken by government to train and educate people to make them productive would result in a substantial saving of money. He said this approach is currently being tried in Quebec's biggest ARDA project, in the Lower St. Lawrence-Gaspe area. Over 5,000 adults between 16 and 60 returned to school

at the beginning of January to finish or up-date their education there.

Speaking in Toronto to the Women's Canadian Club, he noted that some economists say we are coming to an age of enforced leisure. He said that a few people in our society will soon be able to produce enough goods and supply enough services for the rest of us and that we will not have to work. He went on, "I think they are wrong and indeed I hope they are—first because I think that creative and productive work is the most satisfying activity a man can engage in; and secondly, because there are still many millions of human beings in want and suffering, many rich people who want to be richer, many works of art still to create, many stars and planets to explore." V



Hi Folks:

Ted Corbett is talking about writing a book that will shake up the whole dairy industry.

"It's time we took a good look at ourselves," he said, as he put another spoonful of DAIRY-MATE into his coffee. "The reason people are turning away from wholesome dairy products and buying synthetic substitutes is because we have failed to adjust our advertising to this modern world."

"In what way?" I asked, though I should've known better by this time.

"Telling people that milk and butter builds healthy bodies is useless," he growled. "Today's market place is a battleground so you've got to have a real fighting message. Look what the competition is doing."

"What is it doing?"

"Doing!" he roared. "Why they're using every dirty propaganda trick in the military manual — radiation scares, cholesterol gas, even bacteriological warfare! Only the other day some scientific quacks were hinting that milk might even be a cancer carrier. I tell you, it's time we started to fight back!"

"How do you figure we should go about it?" I asked.

"By fighting fire with fire," he said grimly. "Instead of namby-pamby ads about how much good there is in a bottle of milk tell people how bad dairy substitutes can be."

"For instance?"

"Aggressive advertising," he said. "Attack them! Do you have DAIRY-MATE BREATH? For fast, fast relief from MARGARINE STOMACH take sweet, golden BUTTER — feel better in minutes!"

"You'll never get the National Dairy Council to go for that," I scoffed.

"That's what I mean about failing to adjust," he sighed. "But wait until my book comes out. That'll jolt 'em!"

"You should've written it long ago," I told him, "before these substitute products got such a big hold on the market."

"You're so right," he nodded. "But when everybody began to turn to loose-housing it loused up my title. Now that we have free stalls coming in though—"

"What is your title?" I asked, knowing I shouldn't.

"The Comfortable Stall," he said, "something like that religious book this Berton fella turned out. I figure I can get the Dairy Council to finance it."

Sincerely,
PETE WILLIAMS.

